

GenCore version 5.1.6
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OM protein - Protein search, using sw model

Run on: February 23, 2004, 11:32:14 ; Search time 35 Seconds
(without alignments)
31.745 Million cell updates/sec

Title: US-09-989-994-1201
Perfect score: 36
Sequence: 1 TSGHLSR 7

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1107863 seqs, 158726573 residues

Total number of hits satisfying chosen parameters: 2

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 100%
Maximum Match 100%
Listing first 2000 summaries

Database : A_Geneseq_19Jun03:*

1: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1980.DAT:*
2: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1981.DAT:*
3: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1982.DAT:*
4: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1983.DAT:*
5: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1984.DAT:*
6: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1985.DAT:*
7: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1986.DAT:*
8: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1987.DAT:*
9: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1988.DAT:*
10: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1989.DAT:*
11: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1990.DAT:*
12: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1991.DAT:*
13: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1992.DAT:*
14: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1993.DAT:*
15: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1994.DAT:*
16: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1995.DAT:*
17: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1996.DAT:*
18: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1997.DAT:*
19: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1998.DAT:*
20: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1999.DAT:*
21: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA2000.DAT:*
22: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA2001.DAT:*
23: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA2002.DAT:*
24: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA2003.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description |
|------------|-------|-------------|--------|-------|-----------------------------|
| 1 | 36 | 100.0 | 7 | 23 | ABJ03962 Human VEGF-targete |
| 2 | 36 | 100.0 | 7 | 23 | ABP48959 Zinc finger protei |

ALIGNMENTS

RESULT 1
ABJ03962

ID ABJ03962 standard; Peptide; 7 AA.
XX
AC ABJ03962;
XX
DT 25-SEP-2002 (first entry)
XX
DE Human VEGF-targeted zinc finger protein fragment SEQ ID NO: 247.
XX
KW Zinc finger protein; angiogenesis; vasculogenesis; ischaemia;
KW diabetic retinopathy; psoriasis; arthropathy; cancer; tumour growth;
KW gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnerary;
KW antiulcer; cytoslatic; antipsoriatic; antidiabetic; ophthalmological;
KW osteopathic; antifertility.
XX
OS Homo sapiens.
XX
PN WO200246412-A2.
XX
PD 13-JUN-2002.
XX
PF 06-DEC-2001; 2001WO-US46861.
XX
PR 07-DEC-2000; 2000US-0733604.
PR 12-DEC-2000; 2000US-0736083.
PR 30-APR-2001; 2001US-0846033.
XX
PA (SANG-) SANGAMO BIOSCIENCES INC.
XX
PI Rebar E, Jamieson A, Liu Q, Liu P, Wolffe A, Eisenberg SP;
PI Jarvis E;
XX
DR WPI; 2002-527918/56.
XX
PT New zinc finger protein that binds to target site in vascular
PT endothelial growth factor gene, useful for modulating expression of the
PT gene and for treating atherosclerosis, ischemia, arthritis, wound or
PT ulcer -
XX
PS Claim 4; Page 103; 195pp; English.
XX
CC The present invention relates to a zinc finger protein that binds to a
CC target site in one or more vascular endothelial growth factor (VEGF)
CC genes. The protein is useful for modulating expression of a VEGF gene,
CC thereby regulating angiogenesis and vasculogenesis. This can be used to
CC treat atherosclerosis, ischaemia, arthritis, wounds, ulcers, tumours,
CC diabetic retinopathy or psoriasis. The present sequence is a peptide
CC shown in the invention.
XX
SQ Sequence 7 AA;
QY 1 TSGHLSR 7
Db 1 TSGHLSR 7
Query Match 100.0%; Score 36; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

RESULT 2
ABP48959
ID ABP48959 standard; Peptide; 7 AA.
XX
AC ABP48959;
XX
DT 28-AUG-2002 (first entry)
XX
DE Zinc finger protein related peptide motif SEQ ID NO:1201.
XX
KW Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX
OS Homo sapiens.
OS Synthetic.

XX WO200242459-A2.
 EN 30-MAY-2002.
 XX
 PD 20-NOV-2001; 2001WO-US43438.
 XX
 PF 20-NOV-2000; 2000US-0716637.
 XX
 PR (SANG-) SANGAMO BIOSCIENCES INC.
 XX
 PA
 XX
 PI Liu Q;
 DR WPI; 2002-500284/53.
 XX
 PT New zinc finger protein that binds to target site, useful in studying
 PT gene function and for human therapeutics and plant engineering,
 PT comprises first, second and third zinc fingers, ordered from N- to
 PT C-terminus -
 XX
 PS Claim 1; Page 44; 81pp; English.
 XX
 CC The present invention describes a zinc finger protein (I) that binds to
 CC a target site, comprising a first (F1), a second (F2), and a third (F3)
 CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
 CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
 CC and a third (S3) target subsite. Also described are: (I) a polypeptide
 CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
 CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
 CC it binds to the S1 target subsite, selecting the F2 zinc finger such
 CC that it binds to the S2 target subsite, and selecting the F3 zinc
 CC finger such that it binds to the S3 target subsite, thus designing (I)
 CC that binds to a target site. (I) is useful for recognition of triplet
 CC target subsites having the nucleotide G in the 5'-most position of the
 CC subsite. (I) is useful in studying gene function, and for human
 CC therapeutics and plant engineering. (I), (II) or (III) is useful in
 CC therapeutic methods to modulate the expression of a target region within
 CC a subject, in diagnostic methods for sequence specific detection of
 CC target nucleic acid in a sample, and in assays to determine the
 CC phenotype and function of gene expression. (I) has improved affinity
 CC and specificity for their target sequences, as well as enhanced
 CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
 CC represent DNA target sequences and zinc finger peptides which are given
 CC in the exemplification of the present invention.
 XX
 SQ Sequence 7 AA;
 Query Match 100.0%; Score 36; DB 23; Length 7;
 Best Local Similarity 100.0%; Pred. No. 9.3e+05;
 Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 OY 1 TSGHLSR 7
 |||||
 Db 1 TSGHLSR 7

Search completed: February 23, 2004, 11:42:07
 Job time : 35 secs

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OM protein - protein search, using sw model

Run on: February 23, 2004, 11:40:23 ; Search time 12.6667 Seconds
(without alignments)
23.382 Million cell updates/sec

Title: US-09-989-994-1201
Perfect score: 36
Sequence: 1 TSGHLSR 7

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 328717 seqs, 42310858 residues

Total number of hits satisfying chosen parameters: 0

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 100%

Maximum Match 100%

Listing first 2000 summaries

Database : Issued Patents AA:*

- 1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
- 2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
- 3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
- 4: /cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
- 5: /cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
- 6: /cgn2_6/ptodata/1/iaa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | ID | Description |
|------------|-------|-------------|----|-------------|
| ----- | | | | |

No matches found

Search completed: February 23, 2004, 11:45:56
Job time : 12.6667 secs

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OM protein - protein search, using sw model

Run on: February 23, 2004, 11:42:13 ; Search time 27 Seconds
(without alignments)
54,284 Million cell updates/sec

Title: US-09-989-994-1201
Perfect score: 36
Sequence: 1 TSGHLSR 7

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 801455 seqs, 209382283 residues

Total number of hits satisfying chosen parameters: 5

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 100%
Maximum Match 100%
Listing first 2000 summaries

Database : Published Applications AA:*

- 1: /cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*
- 2: /cgn2_6/ptodata/1/pubpaa/PCT_NEW_PUB.pep:*
- 3: /cgn2_6/ptodata/1/pubpaa/US06_NEW_PUB.pep:*
- 4: /cgn2_6/ptodata/1/pubpaa/US06_PUBCOMB.pep:*
- 5: /cgn2_6/ptodata/1/pubpaa/US07_NEW_PUB.pep:*
- 6: /cgn2_6/ptodata/1/pubpaa/PCTUS_PUBCOMB.pep:*
- 7: /cgn2_6/ptodata/1/pubpaa/US08_NEW_PUB.pep:*
- 8: /cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*
- 9: /cgn2_6/ptodata/1/pubpaa/US09A_PUBCOMB.pep:*
- 10: /cgn2_6/ptodata/1/pubpaa/US09B_PUBCOMB.pep:*
- 11: /cgn2_6/ptodata/1/pubpaa/US09C_PUBCOMB.pep:*
- 12: /cgn2_6/ptodata/1/pubpaa/US09_NEW_PUB.pep:*
- 13: /cgn2_6/ptodata/1/pubpaa/US10A_PUBCOMB.pep:*
- 14: /cgn2_6/ptodata/1/pubpaa/US10B_PUBCOMB.pep:*
- 15: /cgn2_6/ptodata/1/pubpaa/US10C_PUBCOMB.pep:*
- 16: /cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB.pep:*
- 17: /cgn2_6/ptodata/1/pubpaa/US60_NEW_PUB.pep:*
- 18: /cgn2_6/ptodata/1/pubpaa/US60_PUBCOMB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | length | ID | Description |
|------------|-------|-------------|--------|----|--------------------|
| 1 | 36 | 100.0 | 7 | 9 | US-09-989-789-1201 |
| 2 | 36 | 100.0 | 7 | 11 | US-09-846-033B-247 |
| 3 | 36 | 100.0 | 7 | 11 | US-09-990-186-1201 |
| 4 | 36 | 100.0 | 7 | 11 | US-09-989-994-1201 |
| 5 | 36 | 100.0 | 7 | 15 | US-10-006-069A-247 |

ALIGNMENTS

RESULT 1
US-09-989-789-1201
; Sequence 1201, Application US/09989789
; Patent No. US20020063379A1
; GENERAL INFORMATION:

APPLICANT: LIU, Qiang
; TITLE OF INVENTION: POSITION DEPENDENT RECOGNITION OF GNN NUCLEOTIDE
; FILE REFERENCE: 8325-0011.20 / S11-US2
; CURRENT APPLICATION NUMBER: US/09/989,789
; NUMBER OF SEQ ID NOS: 4085
; SOFTWARE: Patentiq Ver. 2.0
; SEQ ID NO 1201
; LENGTH: 7
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: example ZFP
US-09-989-789-1201

Query Match 100.0%; Score 36; DB 9; Length 7;
Best Local Similarity 100.0%; Pred. No. 7.1e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 TSGHLSR 7
Db 1 TSGHLSR 7

RESULT 2
US-09-846-033B-247
; Sequence 247, Application US/09846033B
; Publication No. US20030044404A1
; GENERAL INFORMATION:
; APPLICANT: Rebar, Edward
; APPLICANT: Jamieson, Andrew
; APPLICANT: Liu, Qiang
; APPLICANT: Liu, Pei-Qi
; APPLICANT: Wolffe, Alan
; APPLICANT: Eisenberg, Stephen P.
; APPLICANT: Jarvis, Eric
; APPLICANT: Sangamo Biosciences, Inc.
; TITLE OF INVENTION: Regulation of Angiogenesis With Zinc
; FILE REFERENCE: 019496-005820US
; CURRENT APPLICATION NUMBER: US/09/846,033B
; CURRENT FILING DATE: 2001-04-30
; PRIOR FILING DATE: 2000-12-07
; PRIOR APPLICATION NUMBER: US 09/733,604
; PRIOR FILING DATE: 2000-12-07
; PRIOR APPLICATION NUMBER: US 09/736,083
; NUMBER OF SEQ ID NOS: 252
; SOFTWARE: FastSeq for Windows Version 3.0
; SEQ ID NO 247
; LENGTH: 7
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: finger
US-09-846-033B-247

Query Match 100.0%; Score 36; DB 11; Length 7;
Best Local Similarity 100.0%; Pred. No. 7.1e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 TSGHLSR 7
Db 1 TSGHLSR 7

RESULT 3
US-09-990-186-1201
; Sequence 1201, Application US/09990186
; Publication No. US20030068675A1
; GENERAL INFORMATION:
; APPLICANT: LIU, Qiang
; TITLE OF INVENTION: POSITION DEPENDENT RECOGNITION OF GNN NUCLEOTIDE

Methods

```
; TITLE OF INVENTION: TRIPLETS BY ZINC FINGERS
; FILE REFERENCE: 8325-0011.21 / S11-US3
; CURRENT APPLICATION NUMBER: US/09/990,186
; CURRENT FILING DATE: 2001-11-20
; NUMBER OF SEQ ID NOS: 4085
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1201
; LENGTH: 7
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: example ZFP
US-09-990-186-1201
```

```
Query Match          100.0%; Score 36; DB 11; Length 7;
Best Local Similarity 100.0%; Pred. No. 7.1e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
```

```
QY      1 TSGHLSR 7
        |||||
Db      1 TSGHLSR 7
```

```
RESULT 4
US-09-989-994-1201
; Sequence 1201, Application US/09989994
; Publication No. US20030104526A1
; GENERAL INFORMATION:
; APPLICANT: LIU, Qiang
; TITLE OF INVENTION: POSITION DEPENDENT RECOGNITION OF GNN NUCLEOTIDE
; TITLE OF INVENTION: TRIPLETS BY ZINC FINGERS
; FILE REFERENCE: 8325-0011.20 / S11-US2
; CURRENT APPLICATION NUMBER: US/09/989,994
; CURRENT FILING DATE: 2001-11-20
; NUMBER OF SEQ ID NOS: 4085
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 1201
; LENGTH: 7
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: Description of Artificial Sequence: example ZFP
US-09-989-994-1201
```

```
Query Match          100.0%; Score 36; DB 11; Length 7;
Best Local Similarity 100.0%; Pred. No. 7.1e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
```

```
QY      1 TSGHLSR 7
        |||||
Db      1 TSGHLSR 7
```

```
RESULT 5
US-10-006-069A-247
; Sequence 247, Application US/10006069A
; Publication No. US20030021776A1
; GENERAL INFORMATION:
; APPLICANT: Rebar, Edward
; APPLICANT: Jamieson, Andrew
; APPLICANT: Liu, Qiang
; APPLICANT: Liu, Pei-Qi
; APPLICANT: Wolfe, Alan
; APPLICANT: Eisenberg, Stephen P.
; APPLICANT: Jarvis, Eric
; APPLICANT: Sangamo Biosciences, Inc.
; TITLE OF INVENTION: Regulation of Angiogenesis With Zinc
; TITLE OF INVENTION: Finger Proteins
; FILE REFERENCE: 019496-005830US
; CURRENT APPLICATION NUMBER: US/10/006,069A
; CURRENT FILING DATE: 2001-12-17
; PRIOR APPLICATION NUMBER: US 09/733,604
; PRIOR FILING DATE: 2000-12-07
```

```
; PRIOR APPLICATION NUMBER: US 09/736,083
; PRIOR FILING DATE: 2000-12-12
; PRIOR APPLICATION NUMBER: US 09/846,033
; PRIOR FILING DATE: 2001-04-30
; NUMBER OF SEQ ID NOS: 252
; SOFTWARE: FastSeq for Windows Version 3.0
; SEQ ID NO 247
; LENGTH: 7
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: finger
US-10-006-069A-247
```

```
Query Match          100.0%; Score 36; DB 15; Length 7;
Best Local Similarity 100.0%; Pred. No. 7.1e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
```

```
QY      1 TSGHLSR 7
        |||||
Db      1 TSGHLSR 7
```

Search completed: February 23, 2004, 11:47:32
Job time : 27 secs

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OM protein - protein search, using sw model

Run on: February 23, 2004, 11:37:34 ; Search time 11.6667 Seconds

(without alignments)
57.701 Million cell updates/sec

Title: US-09-989-994-1201

Perfect score: 36
Sequence: 1 TSGHLSR 7

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283308 segs, 96168682 residues

Total number of hits satisfying chosen parameters: 1

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 100%
Maximum Match 100%
Listing first 2000 summaries

Database : PIR_76:*
1: pirl:*
2: pirl2:*
3: pirl3:*
4: pirl4:*

Pred. NO. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | ID | Description |
|------------|-------|-------------|--------|----------|--------------------|
| 1 | 36 | 100.0 | 220 | 2 S45927 | probable finger pr |

ALIGNMENTS

RESULT 1
S45927
probable finger protein YBR066c - yeast (Saccharomyces cerevisiae)
N:Alternate names: hypothetical protein YBR0616
C:Species: Saccharomyces cerevisiae
C>Date: 26-Aug-1994 #sequence_revision 09-Sep-1994 #text_change 19-Apr-2002
C:Accession: S45927; S45926
R:Feldmann, H.; Mannhaupt, G.; Schwarzlose, C.; Vetter, I.
Submitted to the Protein Sequence Database, August 1994
A:Reference number: S45927
A:Accession: S45927
A:Molecule type: DNA
A:Residues: 1-187 <FEL>
A:Cross-references: EMBL:Z35935; MIPS:YBR066c
A:Experimental source: strain S288C
R:Domdey, H.; Gassenhuber, H.; Obermaier, B.; Piravandi, E.
Submitted to the Protein Sequence Database, August 1994
A:Reference number: S45816
A:Accession: S45926
A:Molecule type: DNA
A:Residues: 124-220 <DOM>
A:Cross-references: EMBL:Z35935; MIPS:YBR066c
A:Experimental source: strain S288C

C:Genetics:
A:Gene: SGD:NRG2
A:Cross-references: SGD:S0000270
A:Map position: 2R
A>Note: YBR066c
C:Keywords: nucleus; zinc finger
F;155-175/Region: zinc finger
F;183-205/Region: zinc finger

Query Match 100.0%; Score 36; DB 2; Length 220;
Best Local Similarity 100.0%; Pred. No. 1.9;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 TSGHLSR 7
DB 164 TSGHLSR 170

Search completed: February 23, 2004, 11:45:05
Job time : 11.6667 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: February 23, 2004, 11:35:04 ; Search time 7.66667 Seconds
(without alignments)
42.937 Million cell updates/sec

Title: US-09-989-994-1201
Perfect score: 36
Sequence: 1 TSGHLSR 7

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 127863 seqs, 47026705 residues

Total number of hits satisfying chosen parameters: 1

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 100%
Maximum Match 100%
Listing first 2000 summaries

Database : SwissProt_41:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description |
|------------|-------|-------------|--------|--------------|--------------------|
| 1 | 36 | 100.0 | 220 | 1 NRG2_YEAST | P38082 saccharomyc |

ALIGNMENTS

RESULT 1
NRG2_YEAST STANDARD; PRT; 220 AA.
AC P38082;
DT 01-OCT-1994 (Rel. 30, Created)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Probable transcriptional regulator NRG2.
GN NRG2 OR YBR066C OR YBR0616.
OS Saccharomyces cerevisiae (Baker's yeast).
OC Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
OC Saccharomycetales; Saccharomycetaceae; Saccharomycetes.
OX NCBI_TaxID=4932;
RN [1]
RP SEQUENCE OF 1-187 FROM N.A.
RC STRAIN=S288c;
RA Feldmann H., Mannhaupt G., Schwarzlose C., Vetter I.;
RL Submitted (Aug-1994) to the EMBL/GenBank/DBJ databases.
RN [2]
RP SEQUENCE OF 124-220 FROM N.A.
RC STRAIN=S288c;
RA Domdey H., Gassenhuber H., Obermaier B., Piravandi E.;
RL Submitted (Aug-1994) to the EMBL/GenBank/DBJ databases.
CC -1- FUNCTION: Transcriptional repressor (By similarity).
CC -1- SUBCELLULAR LOCATION: Nuclear (Potential).
CC -1- SIMILARITY: Contains 2 C2H2-type zinc fingers.

CC This SWISS-PROT entry is copyright. It is produced through a collaboration
CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC the European Bioinformatics Institute. There are no restrictions on its
CC use by non-profit institutions as long as its content is in no way
CC modified and this statement is not removed. Usage by and for commercial
CC entities requires a license agreement (See <http://www.isb-sib.ch/announce/>
CC or send an email to license@isb-sib.ch).

DR EMBL; Z35935; CAA85010.1; -.
DR PIR; S45927; S45927.
DR TRASNFA; T03517; -.
DR SGD; S0000270; NRG2.
DR GO; GO:0005634; C:nucleus; IC.
DR GO; GO:0016564; F:transcriptional repressor activity; IDA.
DR GO; GO:0007125; P:invasive growth; IDA.
DR InterPro; IPR007087; Znf_C2H2.
DR Pfam; PF00096; Zf-C2H2; 2.
DR SMART; SM00355; Znf_C2H2; 2.
DR PROSITE; PS00028; ZINC_FINGER_C2H2_1; 2.
DR PROSITE; PS50157; ZINC_FINGER_C2H2_2; 2.
KW DNA-binding; Nuclear protein; Zinc-finger; Metal-binding; Repressor;
KW Transcription regulation; Repeat.
FT ZN_FING 153 175 C2H2-TYPE 1.
FT ZN_FING 181 205 C2H2-TYPE 2.
SQ SEQUENCE 220 AA; 25009 MW; 8EA18F326910F1FB CRC64;

Query Match 100.0%; Score 36; DB 1; Length 220;
Best Local Similarity 100.0%; Pred. No. 0.97;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 TSGHLSR 7
Db 164 TSGHLSR 170

Search completed: February 23, 2004, 11:42:41
Job time : 7.66667 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: February 23, 2004, 11:36:14 ; Search time 27.6667 Seconds
(without alignments)
65.290 Million cell updates/sec

Title: US-09-989-994-1201
Perfect score: 36
Sequence: 1 TSGHLSR 7

Scoring table: BIOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 830525 segs, 258052604 residues

Total number of hits satisfying chosen parameters: 0

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 100%
Maximum Match 100%
Listing first 2000 summaries

Database : SPTREMBL_23:*
1: sp_archaea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*
15: sp_rvirus:*
16: sp_bacteriaph:*
17: sp_archaeap:*

Pred. NO. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | ID | Description |
|------------------|-------|----------------|--------|----|-------------|
| ----- | | | | | |
| No matches found | | | | | |

Search completed: February 23, 2004, 11:44:17
Job time : 27.6667 secs

GenCore version 5.1.6
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OM protein - protein search, using sw model

Run on: February 23, 2004, 11:40:23 ; Search time 12.6667 Seconds
(without alignments)
23.382 Million cell updates/sec

Title: US-09-989-994-395
Perfect score: 35
Sequence: 1 DRSNLTR 7

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 328717 seqs, 42310858 residues

Total number of hits satisfying chosen parameters: 3

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 100%
Maximum Match 100%
Listing first 2000 summaries

Database : Issued Patents AA:*
1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
4: /cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
5: /cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
6: /cgn2_6/ptodata/1/iaa/backfile1.pep:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB ID | Description |
|------------|-------|-------------|--------|-------|-------------------|
| 1 | 35 | 100.0 | 7 | 4 | US-09-731-558-20 |
| 2 | 35 | 100.0 | 89 | 3 | US-08-793-408-18 |
| 3 | 35 | 100.0 | 89 | 3 | US-09-139-762A-18 |

ALIGNMENTS

RESULT 1
US-09-731-558-20
; Sequence 20, Application US/09731558
; Patent No. 6503717
; GENERAL INFORMATION:
; APPLICANT: Case, Casey Christopher
; APPLICANT: Liu, Qiang
; APPLICANT: Rebar, Edward J.
; APPLICANT: Sangamo Biosciences, Inc.
; TITLE OF INVENTION: Methods of Using Randomized Libraries of Zinc Finger
; FILE REFERENCE: 019496-003210US
; CURRENT APPLICATION NUMBER: US/09/731,558
; PRIOR FILING DATE: 2000-12-06
; PRIOR APPLICATION NUMBER: US 09/456,100
; NUMBER OF SEQ ID NOS: 24
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 20

LENGTH: 7
TYPE: PRT
ORGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: Description of Artificial Sequence: SBS9
US-09-731-558-20

Query Match 100.0%; Score 35; DB 4; Length 7;
Best Local Similarity 100.0%; Pred. No. 2.5e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7
Db 1 DRSNLTR 7

RESULT 2
US-08-793-408-18

; Sequence 18, Application US/08793408
; Patent No. 6007988
; GENERAL INFORMATION:

APPLICANT: Choo, Yen
APPLICANT: Klug, Aaron
APPLICANT: Sanchez Garcia, Isidro
TITLE OF INVENTION: Improvements in or Relating to
TITLE OF INVENTION: Binding Proteins for Recognition of DNA
NUMBER OF SEQUENCES: 18
CORRESPONDENCE ADDRESS:
ADDRESSEE: Pillsbury Madison & Sutro, L.L.P.
STREET: 1100 New York Avenue, N.W.
CITY: Washington
STATE: D.C.
COUNTRY: USA
ZIP: 20005-3918

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Word Perfect
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/793,408

FILING DATE:

CLASSIFICATION: 435

PRIOR APPLICATION DATA:

APPLICATION NUMBER: PCT/GB95/01949

FILING DATE: 17-AUG-1995

PRIOR APPLICATION DATA:

APPLICATION NUMBER: GB 9514698.1

FILING DATE: 18-JUL-1995

PRIOR APPLICATION DATA:

APPLICATION NUMBER: GB 9422534.9

FILING DATE: 08-NOV-1994

PRIOR APPLICATION DATA:

APPLICATION NUMBER: GB 9416880.4

FILING DATE: 20-AUG-1994

INFORMATION FOR SEQ ID NO: 18:

SEQUENCE CHARACTERISTICS:

LENGTH: 89 amino acids

TYPE: amino acid

STRANDEDNESS:

TOPOLOGY: unknown

MOLECULE TYPE: protein

US-08-793-408-18

Query Match 100.0%; Score 35; DB 3; Length 89;
Best Local Similarity 100.0%; Pred. No. 0.98;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7
Db 74 DRSNLTR 80

RESULT 3
US-09-139-762A-18

; Sequence 18, Application US/09139762A
; Patent No. 6013453

; GENERAL INFORMATION:

; APPLICANT: Choo, Yen

; APPLICANT: Klug, Aaron

; APPLICANT: Sanchez Garcia, Isidro

; TITLE OF INVENTION: Improvements in or Relating to

; TITLE OF INVENTION: Binding Proteins for Recognition of DNA

; NUMBER OF SEQUENCES: 125

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: Pillsbury Madison & Sutro, L.L.P.

; STREET: 1100 New York Avenue, N.W.

; CITY: Washington

; STATE: D.C.

; COUNTRY: USA

; ZIP: 20005-3918

; COMPUTER READABLE FORM:

; MEDIUM TYPE: Diskette

; COMPUTER: IBM PC compatible

; OPERATING SYSTEM: PC-DOS/MS-DOS

; SOFTWARE: Word Perfect

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: US/09/139,762A

; FILING DATE:

; CLASSIFICATION:

; PRIOR APPLICATION DATA:

; APPLICATION NUMBER: US 08/793,408

; FILING DATE: 02-JUN-1997

; APPLICATION NUMBER: PCT/GB95/01949

; FILING DATE: 17-AUG-1995

; PRIOR APPLICATION DATA:

; APPLICATION NUMBER: GB 9514698.1

; FILING DATE: 18-JUL-1995

; PRIOR APPLICATION DATA:

; APPLICATION NUMBER: GB 9422534.9

; FILING DATE: 08-NOV-1994

; PRIOR APPLICATION DATA:

; APPLICATION NUMBER: GB 9416880.4

; FILING DATE: 20-AUG-1994

; INFORMATION FOR SEQ ID NO: 18:

; SEQUENCE CHARACTERISTICS:

; LENGTH: 89 amino acids

; TYPE: amino acid

; STRANDEDNESS:

; TOPOLOGY: unknown

; MOLECULE TYPE: protein

; US-09-139-762A-18

Query Match 100.0%; Score 35; DB 3; Length 89;

Best Local Similarity 100.0%; Pred. No. 0.98;

Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTTR 7

Db 74 DRSNLTTR 80

Search completed: February 23, 2004, 11:45:56
Job time: 12.6667 secs

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OM protein - protein search, using sw model

Run on: February 23, 2004, 11:32:14 ; Search time 35 Seconds

(without alignments)
31.745 Million cell updates/sec

Title: US-09-989-994-395
Perfect score: 35
Sequence: 1 DRSNLTR 7

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1107863 seqs, 158726573 residues

Total number of hits satisfying chosen parameters: 55

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 100%
Maximum Match 100%
Listing first 2000 summaries

Database :

A_Geneseq_19Jun03: *
1: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1980.DAT: *
2: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1981.DAT: *
3: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1982.DAT: *
4: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1983.DAT: *
5: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1984.DAT: *
6: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1985.DAT: *
7: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1986.DAT: *
8: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1987.DAT: *
9: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1988.DAT: *
10: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1989.DAT: *
11: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1990.DAT: *
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15: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1994.DAT: *
16: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1995.DAT: *
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18: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1997.DAT: *
19: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1998.DAT: *
20: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA1999.DAT: *
21: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA2000.DAT: *
22: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA2001.DAT: *
23: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA2002.DAT: *
24: /SIDS1/gcgdata/geneseq/geneseq-emb1/AA2003.DAT: *

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | Query Match | Length | DB | ID | Description |
|------------|-------|-------------|--------|----|----------|--------------------|
| 1 | 35 | 100.0 | 7 | 22 | AAB84241 | Zinc protein recog |
| 2 | 35 | 100.0 | 7 | 23 | AAO22230 | Zinc finger protei |
| 3 | 35 | 100.0 | 7 | 23 | ABB83564 | F2 zinc finger for |
| 4 | 35 | 100.0 | 7 | 23 | ABJ03793 | Human VEGF-targete |
| 5 | 35 | 100.0 | 7 | 23 | ABJ03812 | Human VEGF-targete |
| 6 | 35 | 100.0 | 7 | 23 | ABJ03813 | Human VEGF-targete |
| 7 | 35 | 100.0 | 7 | 23 | ABJ03816 | Human VEGF-targete |
| 8 | 35 | 100.0 | 7 | 23 | ABJ03824 | Human VEGF-targete |
| 9 | 35 | 100.0 | 7 | 23 | ABJ03888 | Human VEGF-targete |

| | | | | | | |
|----|----|-------|----|----|----------|--------------------|
| 10 | 35 | 100.0 | 7 | 23 | ABJ03910 | Human VEGF-targete |
| 11 | 35 | 100.0 | 7 | 23 | ABJ03913 | Human VEGF-targete |
| 12 | 35 | 100.0 | 7 | 23 | ABJ03935 | Rat VEGF-targeted |
| 13 | 35 | 100.0 | 7 | 23 | ABJ03937 | Rat VEGF-targeted |
| 14 | 35 | 100.0 | 7 | 23 | ABB80798 | Human ER-alpha loc |
| 15 | 35 | 100.0 | 7 | 23 | ABB80812 | Human ER-alpha loc |
| 16 | 35 | 100.0 | 7 | 23 | ABP48386 | Zinc finger protei |
| 17 | 35 | 100.0 | 7 | 23 | ABP49157 | Zinc finger protei |
| 18 | 35 | 100.0 | 7 | 23 | ABP49201 | Zinc finger protei |
| 19 | 35 | 100.0 | 7 | 23 | ABP49224 | Zinc finger protei |
| 20 | 35 | 100.0 | 7 | 23 | ABP49231 | Zinc finger protei |
| 21 | 35 | 100.0 | 7 | 23 | ABP49241 | Zinc finger protei |
| 22 | 35 | 100.0 | 7 | 23 | ABP49259 | Zinc finger protei |
| 23 | 35 | 100.0 | 7 | 23 | ABP49274 | Zinc finger protei |
| 24 | 35 | 100.0 | 7 | 23 | ABP49313 | Zinc finger protei |
| 25 | 35 | 100.0 | 7 | 23 | ABP49666 | Zinc finger protei |
| 26 | 35 | 100.0 | 7 | 23 | ABP49769 | Zinc finger protei |
| 27 | 35 | 100.0 | 7 | 23 | ABP49880 | Zinc finger protei |
| 28 | 35 | 100.0 | 7 | 23 | ABP49958 | Zinc finger protei |
| 29 | 35 | 100.0 | 7 | 23 | ABP49964 | Zinc finger protei |
| 30 | 35 | 100.0 | 7 | 23 | ABP50056 | Zinc finger protei |
| 31 | 35 | 100.0 | 7 | 23 | ABP50162 | Zinc finger protei |
| 32 | 35 | 100.0 | 7 | 23 | ABP50166 | Zinc finger protei |
| 33 | 35 | 100.0 | 7 | 23 | ABP50254 | Zinc finger protei |
| 34 | 35 | 100.0 | 7 | 23 | ABP50277 | Zinc finger protei |
| 35 | 35 | 100.0 | 7 | 23 | ABP50311 | Zinc finger protei |
| 36 | 35 | 100.0 | 7 | 23 | ABP50373 | Zinc finger protei |
| 37 | 35 | 100.0 | 7 | 23 | ABP50521 | Zinc finger protei |
| 38 | 35 | 100.0 | 7 | 23 | ABP50524 | Zinc finger protei |
| 39 | 35 | 100.0 | 7 | 23 | ABP50535 | Zinc finger protei |
| 40 | 35 | 100.0 | 7 | 23 | ABP50538 | Zinc finger protei |
| 41 | 35 | 100.0 | 7 | 23 | ABP50542 | Zinc finger protei |
| 42 | 35 | 100.0 | 7 | 23 | ABP50545 | Zinc finger protei |
| 43 | 35 | 100.0 | 7 | 23 | ABP50823 | Zinc finger protei |
| 44 | 35 | 100.0 | 7 | 23 | ABP50858 | Zinc finger protei |
| 45 | 35 | 100.0 | 7 | 23 | ABP50861 | Zinc finger protei |
| 46 | 35 | 100.0 | 7 | 23 | ABP50914 | Zinc finger protei |
| 47 | 35 | 100.0 | 7 | 23 | ABP50920 | Zinc finger protei |
| 48 | 35 | 100.0 | 7 | 23 | ABP51092 | Zinc finger protei |
| 49 | 35 | 100.0 | 7 | 23 | ABP51101 | Zinc finger protei |
| 50 | 35 | 100.0 | 7 | 23 | ABP51147 | Zinc finger protei |
| 51 | 35 | 100.0 | 7 | 23 | ABP51150 | Zinc finger protei |
| 52 | 35 | 100.0 | 7 | 23 | ABP51159 | Zinc finger protei |
| 53 | 35 | 100.0 | 7 | 23 | ABP51180 | Zinc finger protei |
| 54 | 35 | 100.0 | 7 | 24 | ABG75740 | Zinc finger protei |
| 55 | 35 | 100.0 | 89 | 17 | AAK89200 | Zinc finger DNA bi |

ALIGNMENTS

RESULT 1
AAB84241
ID AAB84241 standard; peptide; 7 AA.
XX
AC AAB84241;
XX
DT 06-AUG-2001 (first entry)
XX
DE Zinc protein recognition helix SB89 for target DNA triplet GAC.
XX
KW Phenotype associated gene; zinc finger protein; cancer; nephritis;
KW prostate hypertrophy; hematopoiesis; osteoporosis; obesity;
KW cardiovascular disease; diabetes.
XX
XX Synthetic.
OS
XX WO200140798-A2.
XX
XX 07-JUN-2001.
XX
XX 06-DEC-2000; 2000WO-US33086.
XX

```

PR 06-DEC-1999; 59US-0456100.
XX
XX (SANG-) SANGAMO BIOSCIENCES INC.
PA
XX
XX Case CC, Liu Q, Rebar EJ;
PI
XX
XX WPI; 2001-374953/39.
DR
XX
XX Identifying genes associated with selected phenotype for research
PT purposes, involves culturing cells transduced with nucleic acid
PT encoding zinc finger proteins and assaying cells exhibiting selected
PT phenotype
XX
XX Example 1; Page 36; 58pp; English.
PS
XX
XX The specification describes a method for identifying genes associated
CC with a selected phenotype. The method involves providing a library of
CC nucleotide sequences encoding partially randomized zinc finger proteins,
CC transducing cells with expression vectors, each comprising a sequence
CC from the library, culturing the cells for expressing the zinc finger
CC protein, assaying the cells for selected phenotype, and identifying the
CC gene of interest, in cells exhibiting the phenotype. The method is useful
CC for identifying a gene or genes associated with a selected phenotype such
CC as the one related to cancer, nephritis, prostate hypertrophy,
CC hematopoiesis, osteoporosis, obesity, cardiovascular disease or diabetes.
CC The method is useful in academic laboratories, in the biotechnological
CC industries, and in pharmaceutical, genomic, agricultural and chemical
CC companies. AAB84233-44 represent recognition helices of zinc finger
CC proteins, which recognise different DNA triplets.
XX
XX Sequence 7 AA;
SQ
XX
XX Query Match 100.0%; Score 35; DB 22; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 DRSNLTR 7
DB 1 DRSNLTR 7

```

XX Example 7; Page 51; 63pp; English.

PS The invention relates to an isolated, non-canonical (e.g., non-C2H2) zinc
CC finger binding protein (ZFP) comprising one or more non-canonical zinc
CC finger components that bind to a target sequence. A fusion polypeptide of
CC the invention is useful for modulating expression of a gene. The non-
CC canonical ZFP and its encoding polynucleotide, and a fusion protein
CC comprising the non-canonical ZFP and its encoding polynucleotide can be
CC used to treat disease. The non-canonical ZFP can be used in diagnostic
CC assays and to link phenotype to expression of particular genes. The
CC polynucleotide encoding the non-canonical ZFP can be used to treat
CC disorders by gene therapy. This sequence represents a peptide relating to
CC the zinc finger binding protein of the invention.
XX

SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB:23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTR 7
|||
Db 1 DRSNLTR 7

RESULT 3
ABB83564
ID ABB83564 standard; peptide; 7 AA.
AC ABB83564;
XX
DT 27-SEP-2002 (first entry)
XX
DE F2 zinc finger for target /sequence ZFP 1.
XX
KM Zinc finger; stress tolerance; pathogen resistance;
XX agrochemical.
XX
OS Unidentified.
XX
PN WO200257294-A2.
XX
PD 25-JUL-2002.
XX
PF 22-JAN-2002; 2002WO-US01906.
XX
PR 22-JAN-2001; 2001US-263445P.
XX 11-MAY-2001; 2001US-290716P.
XX
PA (SANG-) SANGAMO BIOSCIENCES INC.
XX
PI Jamieson A, Li G;
XX
DR WPI; 2002-566792/60.
XX
PT Modified plant zinc finger protein for modulating gene expression in a
PT plant cell comprises zinc fingers that bind to a target site -
XX
PS Example 4; Page 42; 50pp; English.
XX

The present invention relates to a modified plant zinc finger
protein. This zinc finger protein is used to modulate gene
expression in a plant cell. Nucleic acid encoding the zinc finger is
expressed in plant cells to produce a plant with an altered phenotype
relative to the wild-type plant. The altered phenotype is high in
nutritional value, yield, stress tolerance, pathogen resistance,
resistance to agrochemicals, production of pharmaceutical compounds or
production of industrial chemicals. The present sequence is
a zinc finger protein sequence that is attracted to a ZFP target
sequence.

Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTR 7
DB 1 DRSNLTR 7

RESULT 4

ABJ03793 standard; Peptide; 7 AA.

AC ABJ03793;
DT 25-SEP-2002 (first entry)
DE Human VEGF-targeted zinc finger protein fragment SEQ ID NO: 36.

KW Zinc finger protein; angiogenesis; vasculogenesis; ischaemia;
diabetic retinopathy; psoriasis; arthropathy; cancer; tumour growth;
gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnery;
antitumor; cytosstatic; antipsoriatic; antidiabetic; ophthalmological;
osteopathic; antifertility.

OS Homo sapiens.

PN WO200246412-A2.

PD 13-JUN-2002.

PF 06-DEC-2001; 2001WO-US46861.

PR 07-DEC-2000; 2000US-0733604.

PR 12-DEC-2000; 2000US-0736083.

PR 30-APR-2001; 2001US-0846033.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Rebar E, Jamieson A, Liu Q, Liu P, Wolfe A, Eisenberg SP;
PI Jarvis E;
XX WPI; 2002-527918/56.

PT New zinc finger protein that binds to target site in vascular
PT endothelial growth factor gene, useful for modulating expression of the
PT gene and for treating atherosclerosis, ischemia, arthritis, wound or
PT ulcer -
XX Claim 4; Page 102; 195pp; English.

CC The present invention relates to a zinc finger protein that binds to a
CC target site in one or more vascular endothelial growth factor (VEGF)
CC genes. The protein is useful for modulating expression of a VEGF gene,
CC thereby regulating angiogenesis and vasculogenesis. This can be used to
CC treat atherosclerosis, ischaemia, arthritis, wounds, ulcers, tumours,
CC diabetic retinopathy or psoriasis. The present sequence is a peptide
CC shown in the invention.

SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTR 7
DB 1 DRSNLTR 7

RESULT 5

ABJ03812

ID ABJ03812 standard; Peptide; 7 AA.

AC ABJ03812;

DT 25-SEP-2002 (first entry)

DE Human VEGF-targeted zinc finger protein fragment SEQ ID NO: 55.

KW Zinc finger protein; angiogenesis; vasculogenesis; ischaemia;
diabetic retinopathy; psoriasis; arthropathy; cancer; tumour growth;
gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnery;
antitumor; cytosstatic; antipsoriatic; antidiabetic; ophthalmological;
osteopathic; antifertility.

OS Homo sapiens.

PN WO200246412-A2.

PD 13-JUN-2002.

PF 06-DEC-2001; 2001WO-US46861.

PR 07-DEC-2000; 2000US-0733604.

PR 12-DEC-2000; 2000US-0736083.

PR 30-APR-2001; 2001US-0846033.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Rebar E, Jamieson A, Liu Q, Liu P, Wolfe A, Eisenberg SP;
PI Jarvis E;
XX WPI; 2002-527918/56.

PT New zinc finger protein that binds to target site in vascular
PT endothelial growth factor gene, useful for modulating expression of the
PT gene and for treating atherosclerosis, ischemia, arthritis, wound or
PT ulcer -
XX Claim 4; Page 103; 195pp; English.

CC The present invention relates to a zinc finger protein that binds to a
CC target site in one or more vascular endothelial growth factor (VEGF)
CC genes. The protein is useful for modulating expression of a VEGF gene,
CC thereby regulating angiogenesis and vasculogenesis. This can be used to
CC treat atherosclerosis, ischaemia, arthritis, wounds, ulcers, tumours,
CC diabetic retinopathy or psoriasis. The present sequence is a peptide
CC shown in the invention.

SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTR 7
DB 1 DRSNLTR 7

RESULT 6

ABJ03813 standard; Peptide; 7 AA.

AC ABJ03813;

DT 25-SEP-2002 (first entry)

DE Human VEGF-targeted zinc finger protein fragment SEQ ID NO: 56.

KW Zinc finger protein; angiogenesis; vasculogenesis; ischaemia;
diabetic retinopathy; psoriasis; arthropathy; cancer; tumour growth;
gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnery;
antitumor; cytosstatic; antipsoriatic; antidiabetic; ophthalmological;

KW osteopathic; antiinfertility.
XX
OS Homo sapiens.
XX WO200246412-A2.
FN
XX 13-JUN-2002.
PD
XX 06-DEC-2001; 2001WO-US46861.
PF
XX 07-DEC-2000; 2000US-0733604.
PR 12-DEC-2000; 2000US-0736083.
PR 30-APR-2001; 2001US-0846033.
XX
XX (SANG-) SANGAMO BIOSCIENCES INC.
XX
PI Rebar E, Jamieson A, Liu Q, Liu P, Wolffe A, Eisenberg SP;
PI Jarvis E;
XX
XX WPI; 2002-527918/56.
DR
XX
XX New zinc finger protein that binds to target site in vascular
PT endothelial growth factor gene, useful for modulating expression of the
PT gene and for treating atherosclerosis, ischemia, arthritis, wound or
PT ulcer -
XX
XX Claim 4; Page 103; 195pp; English.
PS
XX The present invention relates to a zinc finger protein that binds to a
CC target site in one or more vascular endothelial growth factor (VEGF)
CC genes. The protein is useful for modulating expression of a VEGF gene,
CC thereby regulating angiogenesis and vasculogenesis. This can be used to
CC treat atherosclerosis, ischaemia, arthritis, wounds, ulcers, tumours,
CC diabetic retinopathy or psoriasis. The present sequence is a peptide
CC shown in the invention.
XX
XX Sequence 7 AA;
SQ
Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
OY 1 DRSNLTTR 7
Db 1 DRSNLTTR 7
RESULT 7
ABJ03816
ID ABJ03816 standard; Peptide; 7 AA.
XX
XX AC ABJ03816;
XX
XX 25-SEP-2002 (first entry)
DT
XX Human VEGF-targeted zinc finger protein fragment SEQ ID NO: 59.
DE
XX Zinc finger protein; angiogenesis; vasculogenesis; ischaemia;
KW diabetic retinopathy; psoriasis; arthropathy; cancer; tumour growth;
KW gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnery;
KW antitumor; cytostatic; antipsoriatic; antidiabetic; ophthalmological;
KW osteopathic; antiinfertility.
XX
XX Homo sapiens.
OS
XX WO200246412-A2.
PN
XX 13-JUN-2002.
PD
XX 06-DEC-2001; 2001WO-US46861.
PF
XX 07-DEC-2000; 2000US-0733604.
PR 12-DEC-2000; 2000US-0736083.
PR 30-APR-2001; 2000US-0736083.
PR

PR 30-APR-2001; 2001US-0846033.
XX
XX (SANG-) SANGAMO BIOSCIENCES INC.
XX
XX Rebar E, Jamieson A, Liu Q, Liu P, Wolffe A, Eisenberg SP;
PI Jarvis E;
XX
XX WPI; 2002-527918/56.
DR
XX
XX New zinc finger protein that binds to target site in vascular
PT endothelial growth factor gene, useful for modulating expression of the
PT gene and for treating atherosclerosis, ischemia, arthritis, wound or
PT ulcer -
XX
XX Claim 4; Page 102; 195pp; English.
PS
XX The present invention relates to a zinc finger protein that binds to a
CC target site in one or more vascular endothelial growth factor (VEGF)
CC genes. The protein is useful for modulating expression of a VEGF gene,
CC thereby regulating angiogenesis and vasculogenesis. This can be used to
CC treat atherosclerosis, ischaemia, arthritis, wounds, ulcers, tumours,
CC diabetic retinopathy or psoriasis. The present sequence is a peptide
CC shown in the invention.
XX
XX Sequence 7 AA;
SQ
Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
OY 1 DRSNLTTR 7
Db 1 DRSNLTTR 7
RESULT 8
ABJ03824
ID ABJ03824 standard; Peptide; 7 AA.
XX
XX AC ABJ03824;
XX
XX 25-SEP-2002 (first entry)
DT
XX Human VEGF-targeted zinc finger protein fragment SEQ ID NO: 67.
DE
XX Zinc finger protein; angiogenesis; vasculogenesis; ischaemia;
KW diabetic retinopathy; psoriasis; arthropathy; cancer; tumour growth;
KW gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnery;
KW antitumor; cytostatic; antipsoriatic; antidiabetic; ophthalmological;
KW osteopathic; antiinfertility.
XX
XX Homo sapiens.
OS
XX WO200246412-A2.
PN
XX 13-JUN-2002.
PD
XX 06-DEC-2001; 2001WO-US46861.
PF
XX 07-DEC-2000; 2000US-0733604.
PR 12-DEC-2000; 2000US-0736083.
PR 30-APR-2001; 2001US-0846033.
PR
XX (SANG-) SANGAMO BIOSCIENCES INC.
XX
XX Rebar E, Jamieson A, Liu Q, Liu P, Wolffe A, Eisenberg SP;
PI Jarvis E;
XX
XX WPI; 2002-527918/56.
DR
XX
XX New zinc finger protein that binds to target site in vascular
PT endothelial growth factor gene, useful for modulating expression of the
PT gene and for treating atherosclerosis, ischemia, arthritis, wound or

PT ulcer -
XX
PS Claim 4; Page 102; 195pp; English.
XX
CC The present invention relates to a zinc finger protein that binds to a
CC target site in one or more vascular endothelial growth factor (VEGF)
CC genes. The protein is useful for modulating expression of a VEGF gene,
CC thereby regulating angiogenesis and vasculogenesis. This can be used to
CC treat atherosclerosis, ischaemia, arthritis, wounds, ulcers, tumours,
CC diabetic retinopathy or psoriasis. The present sequence is a peptide
CC shown in the invention.
XX
SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 DRSNLTR 7
Db 1 DRSNLTR 7

RESULT 9
ABJ03888 standard; Peptide; 7 AA.
XX
AC ABJ03888;
XX
DT 25-SEP-2002 (first entry)
XX
DE Human VEGF-targeted zinc finger protein fragment SEQ ID NO: 134.
XX
KW Zinc finger protein; angiogenesis; vasculogenesis; ischaemia;
KW diabetic retinopathy; psoriasis; arthropathy; cancer; tumour growth;
KW gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnerary;
KW antiulcer; cyostatic; antipsoriatic; antidiabetic; ophthalmological;
KW osteopathic; antiinfertility.
XX
OS Homo sapiens.
XX
PN WO200246412-A2.
XX
PD 13-JUN-2002.
XX
PF 06-DEC-2001; 2001WO-US46861.
XX
PR 07-DEC-2000; 2000US-0733604.
PR 12-DEC-2000; 2000US-0736083.
PR 30-APR-2001; 2001US-0846033.
XX
PA (SANG-) SANGAMO BIOSCIENCES INC.
XX
PI Rebar E, Jamieson A, Liu Q, Liu P, Wolffe A, Eisenberg SP;
PI Jarvis E;
XX
DR WPI; 2002-527918/56.
PT New zinc finger protein that binds to target site in vascular
PT endothelial growth factor gene, useful for modulating expression of the
PT gene and for treating atherosclerosis, ischaemia, arthritis, wound or
PT ulcer -
XX
PS Claim 6; Page 103; 195pp; English.
XX
CC The present invention relates to a zinc finger protein that binds to a
CC target site in one or more vascular endothelial growth factor (VEGF)
CC genes. The protein is useful for modulating expression of a VEGF gene,
CC thereby regulating angiogenesis and vasculogenesis. This can be used to
CC treat atherosclerosis, ischaemia, arthritis, wounds, ulcers, tumours,
CC diabetic retinopathy or psoriasis. The present sequence is a peptide
CC shown in the invention.
XX

SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 DRSNLTR 7
Db 1 DRSNLTR 7

RESULT 10
ABJ03910 standard; Peptide; 7 AA.
XX
AC ABJ03910;
XX
DT 25-SEP-2002 (first entry)
XX
DE Human VEGF-targeted zinc finger protein fragment SEQ ID NO: 167.
XX
KW Zinc finger protein; angiogenesis; vasculogenesis; ischaemia;
KW diabetic retinopathy; psoriasis; arthropathy; cancer; tumour growth;
KW gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnerary;
KW antiulcer; cyostatic; antipsoriatic; antidiabetic; ophthalmological;
KW osteopathic; antiinfertility.
XX
OS Homo sapiens.
XX
PN WO200246412-A2.
XX
PD 13-JUN-2002.
XX
PF 06-DEC-2001; 2001WO-US46861.
XX
PR 07-DEC-2000; 2000US-0733604.
PR 12-DEC-2000; 2000US-0736083.
PR 30-APR-2001; 2001US-0846033.
XX
PA (SANG-) SANGAMO BIOSCIENCES INC.
XX
PI Rebar E, Jamieson A, Liu Q, Liu P, Wolffe A, Eisenberg SP;
PI Jarvis E;
XX
DR WPI; 2002-527918/56.
XX
PT New zinc finger protein that binds to target site in vascular
PT endothelial growth factor gene, useful for modulating expression of the
PT gene and for treating atherosclerosis, ischaemia, arthritis, wound or
PT ulcer -
XX
PS Example 1; Page 104; 195pp; English.
XX
CC The present invention relates to a zinc finger protein that binds to a
CC target site in one or more vascular endothelial growth factor (VEGF)
CC genes. The protein is useful for modulating expression of a VEGF gene,
CC thereby regulating angiogenesis and vasculogenesis. This can be used to
CC treat atherosclerosis, ischaemia, arthritis, wounds, ulcers, tumours,
CC diabetic retinopathy or psoriasis. The present sequence is a peptide
CC shown in the invention.
XX
SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 DRSNLTR 7
Db 1 DRSNLTR 7

RESULT 11

ABJ03913
ID ABJ03913 standard; Peptide; 7 AA.
XX
AC ABJ03913;
XX
DT 25-SEP-2002 (first entry)
XX
DE Human VEGF-targeted zinc finger protein fragment SEQ ID NO: 170.
XX
KW Zinc finger protein; angiogenesis; vasculogenesis; ischaemia;
KW diabetic retinopathy; psoriasis; arthropathy; cancer; tumour growth;
KW gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnery;
KW antiulcer; cycostatic; antipsoriatic; antidiabetic; ophthalmological;
KW osteopathic; antiinfertility.
XX
OS Homo sapiens.
XX
PN WO200246412-A2.
XX
PD 13-JUN-2002.
XX
PF 06-DEC-2001; 2001WO-US46861.
XX
PR 07-DEC-2000; 2000US-0733604.
PR 12-DEC-2000; 2000US-0736083.
PR 30-APR-2001; 2001US-0846033.
XX
PA (SANG-) SANGAMO BIOSCIENCES INC.
XX
PI Rebar E, Jamieson A, Liu Q, Liu P, Wolffe A, Eisenberg SP;
PI Jarvis E;
XX
DR WPI; 2002-527918/56.
XX
PT New zinc finger protein that binds to target site in vascular
PT endothelial growth factor gene, useful for modulating expression of the
PT gene and for treating atherosclerosis, ischemia, arthritis, wound or
PT ulcer -
XX
PS Example 1; Page 104; 195pp; English.
XX
CC The present invention relates to a zinc finger protein that binds to a
CC target site in one or more vascular endothelial growth factor (VEGF)
CC genes. The protein is useful for modulating expression of a VEGF gene,
CC thereby regulating angiogenesis and vasculogenesis. This can be used to
CC treat atherosclerosis, ischaemia, arthritis, wounds, ulcers, tumours,
CC diabetic retinopathy or psoriasis. The present sequence is a peptide
CC shown in the invention.
XX
SQ Sequence 7 AA;
XX
QY
DB 1 DRSNLTR 7
1 DRSNLTR 7
1 DRSNLTR 7
1 DRSNLTR 7
RESULT 12
ABJ03935
ID ABJ03935 standard; Peptide; 7 AA.
XX
AC ABJ03935;
XX
DT 25-SEP-2002 (first entry)
XX
DE Rat VEGF-targeted zinc finger protein fragment SEQ ID NO: 196.
XX
KW Zinc finger protein; angiogenesis; vasculogenesis; ischaemia;
KW diabetic retinopathy; psoriasis; arthropathy; cancer; tumour growth;
KW gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnery;

KW antiulcer; cycostatic; antipsoriatic; antidiabetic; ophthalmological;
KW osteopathic; antiinfertility.
XX
OS Rattus sp.
XX
PN WO200246412-A2.
XX
PD 13-JUN-2002.
XX
PF 06-DEC-2001; 2001WO-US46861.
XX
PR 07-DEC-2000; 2000US-0733604.
PR 12-DEC-2000; 2000US-0736083.
PR 30-APR-2001; 2001US-0846033.
XX
PA (SANG-) SANGAMO BIOSCIENCES INC.
XX
PI Rebar E, Jamieson A, Liu Q, Liu P, Wolffe A, Eisenberg SP;
PI Jarvis E;
XX
DR WPI; 2002-527918/56.
XX
PT New zinc finger protein that binds to target site in vascular
PT endothelial growth factor gene, useful for modulating expression of the
PT gene and for treating atherosclerosis, ischemia, arthritis, wound or
PT ulcer -
XX
PS Disclosure; Page 105; 195pp; English.
XX
CC The present invention relates to a zinc finger protein that binds to a
CC target site in one or more vascular endothelial growth factor (VEGF)
CC genes. The protein is useful for modulating expression of a VEGF gene,
CC thereby regulating angiogenesis and vasculogenesis. This can be used to
CC treat atherosclerosis, ischaemia, arthritis, wounds, ulcers, tumours,
CC diabetic retinopathy or psoriasis. The present sequence is a peptide
CC shown in the invention.
XX
SQ Sequence 7 AA;
XX
QY
DB 1 DRSNLTR 7
1 DRSNLTR 7
1 DRSNLTR 7
1 DRSNLTR 7
RESULT 13
ABJ03937
ID ABJ03937 standard; Peptide; 7 AA.
XX
AC ABJ03937;
XX
DT 25-SEP-2002 (first entry)
XX
DE Rat VEGF-targeted zinc finger protein fragment SEQ ID NO: 198.
XX
KW Zinc finger protein; angiogenesis; vasculogenesis; ischaemia;
KW diabetic retinopathy; psoriasis; arthropathy; cancer; tumour growth;
KW gene therapy; antiatherosclerotic; vasotropic; antiarthritic; vulnery;
KW antiulcer; cycostatic; antipsoriatic; antidiabetic; ophthalmological;
KW osteopathic; antiinfertility.
XX
OS Rattus sp.
XX
PN WO200246412-A2.
XX
PD 13-JUN-2002.
XX
PF 06-DEC-2001; 2001WO-US46861.
XX
PR 07-DEC-2000; 2000US-0733604.
PR

PR 12-DEC-2000; 2000US-0736083.
PR 30-APR-2001; 2001US-0846033.
XX
PA (SANG-) SANGAMO BIOSCIENCES INC.
XX
PI Rebar E, Jamieson A, Liu Q, Liu P, Wolfe A, Eisenberg SP,
PI Jarvis E;
XX
DR WPI; 2002-527918/56.
XX
PT New zinc finger protein that binds to target site in vascular
PT endothelial growth factor gene, useful for modulating expression of the
PT gene and for treating atherosclerosis, ischemia, arthritis, wound or
PT ulcer
XX
PS Disclosure; Page 105; 195pp; English.
XX
CC The present invention relates to a zinc finger protein that binds to a
CC target site in one or more vascular endothelial growth factor (VEGF)
CC genes. The protein is useful for modulating expression of a VEGF gene,
CC thereby regulating angiogenesis and vasculogenesis. This can be used to
CC treat atherosclerosis, ischemia, arthritis, wounds, ulcers, tumors,
CC diabetic retinopathy or psoriasis. The present sequence is a peptide
CC shown in the invention.
XX
SQ Sequence 7 AA;
Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
OY 1 DRSNLTTR 7
DB 1 DRSNLTTR 7
RESULT 14
ABB80798
ID ABB80798 standard; peptide; 7 AA.
XX
AC ABB80798;
XX
DT 23-SEP-2002 (first entry)
XX
DE Human ER-alpha locus targeting ZFP1 peptide #8.
XX
KW ZFP; cytosstatic; antidiabetic; ophthalmological; vasotropic; chromatin;
KW gene expression; antirheumatic; antiarthritic; antipsoriatic; nootropic;
KW neuroprotective; cerebroprotective; estrogen receptor alpha; ER-alpha;
KW zinc finger protein.
XX
OS Synthetic.
XX
FN WO200244386-A2.
XX
PD 06-JUN-2002.
XX
PF 30-NOV-2001; 2001WO-US45098.
XX
PR 01-DEC-2000; 2000US-250804P.
XX
PA (SANG-) SANGAMO BIOSCIENCES INC.
XX
PI Wolfe AP, Tse C, Collingwood T;
XX
DR WPI; 2002-537455/57.
XX
PT Regulating expression of gene by contacting cell with regulatory
PT molecule comprising DNA-binding domain targeted to sequence within
PT accessible region of cellular chromatin associated with a gene, and
PT functional domain -
XX
PS Example 1; Page 44; 64pp; English.

XX
CC The invention relates to regulating the expression of a gene residing in
CC the chromatin of a cell. The method involves identifying one or more
CC accessible regions in cellular chromatin associated with gene; designing
CC a regulatory molecule, where the regulatory molecule comprises a DNA-
CC binding domain targeted to a sequence within the accessible region, and a
CC functional domain; and contacting the regulatory molecule with the cell.
CC The method is used for regulating the expression of a gene (e.g., a gene
CC encoding a nuclear receptor such as estrogen receptor alpha (ERalpha),
CC estrogen receptor beta (ERbeta), hepatocyte nuclear factor 4 alpha
CC (HNF4alpha), hepatocyte nuclear factor 4 gamma (HNF4gamma), peroxisome
CC proliferator activated receptor gamma (PPARgamma), retinoid X receptor
CC alpha (RXRalpha), or constitutively active receptor alpha (CARalpha))
CC residing in the chromatin of a cell. Regulation of gene expression (such
CC as nuclear receptor genes) will be useful in treatment of various
CC diseases, including cancer, diabetes and cardiovascular disease, where
CC the regulatory molecule as described above, is contacted with the cell to
CC carry out the regulation. The method is also useful for modulation of
CC gene expression for therapeutic or prophylactic applications e.g.,
CC diabetic retinopathy, ischemia, macular degeneration, rheumatoid
CC arthritis, psoriasis, HIV infection, sickle cell anemia, Alzheimer's
CC disease, stroke, etc. The method also has applications in pharmaceutical
CC research of both nuclear receptors of known function as well as those of
CC unknown function. The method also facilitates development of tissue and
CC animal models of disease states, drug validation, and therapeutic product
CC development. The methods also allow identification of the role of nuclear
CC receptors of unknown functions in cellular homeostasis. Sequences
CC ABB80791-817 represent zinc finger protein (ZFP) DNA-binding domains that
CC were fused to functional domains and tested for their ability to regulate
CC expression of the ER in living cells.
XX
SQ Sequence 7 AA;
Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
OY 1 DRSNLTTR 7
DB 1 DRSNLTTR 7
RESULT 15
ABB80812
ID ABB80812 standard; peptide; 7 AA.
XX
AC ABB80812;
XX
DT 23-SEP-2002 (first entry)
XX
DE Human ER-alpha locus targeting ZFP3 peptide #4.
XX
KW ZFP; cytosstatic; antidiabetic; ophthalmological; vasotropic; chromatin;
KW gene expression; antirheumatic; antiarthritic; antipsoriatic; nootropic;
KW neuroprotective; cerebroprotective; estrogen receptor alpha; ER-alpha;
KW zinc finger protein.
XX
OS Synthetic.
XX
FN WO200244386-A2.
XX
PD 06-JUN-2002.
XX
PF 30-NOV-2001; 2001WO-US45098.
XX
PR 01-DEC-2000; 2000US-250804P.
XX
PA (SANG-) SANGAMO BIOSCIENCES INC.
XX
PI Wolfe AP, Tse C, Collingwood T;
XX
DR WPI; 2002-537455/57.
XX

PT Regulating expression of gene by contacting cell with regulatory
PT molecule comprising DNA-binding domain targeted to sequence within
PT accessible region of cellular chromatin associated with a gene, and
PT functional domain
XX
PS Example 1; Page 44; 64pp; English.
XX
CC The invention relates to regulating the expression of a gene residing in
CC the chromatin of a cell. The method involves identifying one or more
CC accessible regions in cellular chromatin associated with gene; designing
CC a regulatory molecule, where the regulatory molecule comprises a DNA-
CC binding domain targeted to a sequence within the accessible region, and a
CC functional domain; and contacting the regulatory molecule with the cell.
CC The method is used for regulating the expression of a gene (e.g., a gene
CC encoding a nuclear receptor such as estrogen receptor alpha (ERalpha),
CC estrogen receptor beta (ERbeta), hepatocyte nuclear factor 4 alpha
CC (HNF4alpha), hepatocyte nuclear factor 4 gamma (HNF4gamma), peroxisome
CC proliferator activated receptor gamma (PPARGgamma), retinoid X receptor
CC alpha (RXRalpha), or constitutively active receptor alpha (CARalpha))
CC residing in the chromatin of a cell. Regulation of gene expression (such
CC as nuclear receptor genes) will be useful in treatment of various
CC diseases, including cancer, diabetes and cardiovascular disease, where
CC the regulatory molecule as described above, is contacted with the cell to
CC carry out the regulation. The method is also useful for modulation of
CC gene expression for therapeutic or prophylactic applications e.g.,
CC diabetic retinopathy, ischaemia, macular degeneration, rheumatoid
CC arthritis, psoriasis, HIV infection, sickle cell anemia, Alzheimer's
CC disease, stroke, etc. The method also has applications in pharmaceutical
CC research of both nuclear receptors of known functions as well as those of
CC unknown function. The method also facilitates development of tissue and
CC animal models of disease states, drug validation, and therapeutic product
CC development. The methods also allow identification of the role of nuclear
CC receptors of unknown functions in cellular homeostasis. Sequences
CC ABB80791-817 represent zinc finger protein (ZFP) DNA-binding domains that
CC were fused to functional domains and tested for their ability to regulate
CC expression of the ER in living cells.
XX
SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7
|||
Db 1 DRSNLTR 7

RESULT 16
ABP48386
ID ABP48386 standard; Peptide; 7 AA.
XX
AC ABP48386;
XX
DT 28-AUG-2002 (first entry)
XX
DE Zinc finger protein related peptide motif SEQ ID NO:395.
XX
KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN WO200242459-A2.
XX
PD 30-MAY-2002.
XX
PF 20-NOV-2001; 2001WO-US43438.
XX
PR 20-NOV-2000; 2000US-0716637.
XX
PA (SANG-) SANGAMO BIOSCIENCES INC.
XX

PI Liu Q;
XX
DR WPI; 2002-500284/53.
XX
PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering, to
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus
XX
PS Example 1; Page 37; 81pp; English.
XX

CC The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target sub-site. Also described are: (i) a polypeptide
CC (ii) comprising (I); (2) a polynucleotide (iii) encoding (I) or (ii); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such
CC that it binds to the S2 target sub-site, and selecting the F3 zinc
CC finger such that it binds to the S3 target sub-site, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target sub-sites having the nucleotide G in the 5'-most position of the
CC sub-site. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (ii) or (iii) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
XX
SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7
|||
Db 1 DRSNLTR 7

RESULT 17
ABP49157
ID ABP49157 standard; Peptide; 7 AA.
XX
AC ABP49157;
XX
DT 28-AUG-2002 (first entry)
XX
DE Zinc finger protein related peptide motif SEQ ID NO:1525.
XX
KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN WO200242459-A2.
XX
PD 30-MAY-2002.
XX
PF 20-NOV-2001; 2001WO-US43438.
XX
PR 20-NOV-2000; 2000US-0716637.
XX
PA (SANG-) SANGAMO BIOSCIENCES INC.
PI Liu Q;
XX
DR WPI; 2002-500284/53.

XX New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX
PS Claim 1; Page 47; 81pp; English.
XX
CC The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target sub-site. Also described are: (I) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such
CC that it binds to the S2 target sub-site, and selecting the F3 zinc
CC finger such that it binds to the S3 target sub-site, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target sub-sites having the nucleotide G in the 5'-most position of the
CC sub-site. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determined the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
CC
XX
SQ Sequence 7 AA;
Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 DRSNLTTR 7
Db 1 DRSNLTTR 7
RESULT 18
ABP49201
ID ABP49201 standard; Peptide; 7 AA.
XX AC ABP49201;
XX DT 28-AUG-2002 (first entry)
XX DE Zinc finger protein related peptide motif SEQ ID NO:1454.
XX KW Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX OS Homo sapiens.
XX OS Synthetic.
XX PN WO200242459-A2.
XX PD 30-MAY-2002.
XX PF 20-NOV-2001; 2001WO-US43438.
XX PR 20-NOV-2000; 2000US-0716637.
XX PA (SANG-) SANGAMO BIOSCIENCES INC.
XX PI Liu Q;
XX DR WPI; 2002-500284/53.
PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to

PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX
PS Example 1; Page 47; 81pp; English.
XX
CC The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target sub-site. Also described are: (I) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such
CC that it binds to the S2 target sub-site, and selecting the F3 zinc
CC finger such that it binds to the S3 target sub-site, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target sub-sites having the nucleotide G in the 5'-most position of the
CC sub-site. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determined the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
CC
XX
SQ Sequence 7 AA;
Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 DRSNLTTR 7
Db 1 DRSNLTTR 7
RESULT 19
ABP49224
ID ABP49224 standard; Peptide; 7 AA.
XX AC ABP49224;
XX DT 28-AUG-2002 (first entry)
XX DE Zinc finger protein related peptide motif SEQ ID NO:1376.
XX KW Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX OS Homo sapiens.
XX OS Synthetic.
XX PN WO200242459-A2.
XX PD 30-MAY-2002.
XX PF 20-NOV-2001; 2001WO-US43438.
XX PR 20-NOV-2000; 2000US-0716637.
XX PA (SANG-) SANGAMO BIOSCIENCES INC.
XX PI Liu Q;
XX DR WPI; 2002-500284/53.
PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -

PS Example 1; Page 48; 81pp; English.

XX The present invention describes a zinc finger protein (I) that binds to

CC a target site, comprising a first (F1), a second (F2), and a third (F3)

CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the

CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),

CC and a third (S3) target sub-site. Also described are: (1) a polypeptide

CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and

CC (3) designing (M) (I) involves selecting the F1 zinc finger such that

CC it binds to the S1 target sub-site, selecting the F2 zinc finger such

CC that it binds to the S2 target sub-site, and selecting the F3 zinc

CC finger such that it binds to the S3 target sub-site, thus designing (I)

CC that binds to a target site. (I) is useful for recognition of triplet

CC target sub-sites having the nucleotide G in the 5'-most position of the

CC sub-site. (I) is useful in studying gene function, and for human

CC therapeutics and plant engineering. (I), (II) or (III) is useful in

CC a subject, in diagnostic methods for sequence specific detection of

CC target nucleic acid in a sample, and in assays to determined the

CC phenotype and function of gene expression. (I) has improved affinity

CC and specificity for their target sequences, as well as enhanced

CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230

CC represent DNA target sequences and zinc finger peptides which are given

CC in the exemplification of the present invention.

XX

SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;

Best Local Similarity 100.0%; Pred. No. 9.3e+05;

Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTNR 7

Db 1 DRSNLTNR 7

RESULT 20

ABP49231

ID ABP49231 standard; Peptide; 7 AA.

XX

AC ABP49231;

XX

DT 28-AUG-2002 (first entry)

XX

DE Zinc finger protein related peptide motif SEQ ID NO:1464.

XX

KW Zinc finger protein; ZFP; DNA binding protein; zinc finger.

XX

OS Homo sapiens.

OS Synthetic.

OS

PN WO200242459-A2.

XX

PD 30-MAY-2002.

XX

PF 20-NOV-2001; 2001WO-US43438.

XX

PR 20-NOV-2000; 2000US-0716637.

XX

PA (SANG-) SANGAMO BIOSCIENCES INC.

XX

PI Liu Q;

XX

DR WPI; 2002-500284/53.

XX

PT New zinc finger protein that binds to target site, useful in studying

PT gene function and for human therapeutics and plant engineering,

PT comprises first, second and third zinc fingers, ordered from N- to

PT C-terminus

XX

PS Example 1; Page 48; 81pp; English.

XX

CC The present invention describes a zinc finger protein (I) that binds to

CC a target site, comprising a first (F1), a second (F2), and a third (F3)

CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the

CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),

CC and a third (S3) target sub-site. Also described are: (1) a polypeptide

CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and

CC (3) designing (M) (I) involves selecting the F1 zinc finger such that

CC it binds to the S1 target sub-site, selecting the F2 zinc finger such

CC that it binds to the S2 target sub-site, and selecting the F3 zinc

CC finger such that it binds to the S3 target sub-site, thus designing (I)

CC that binds to a target site. (I) is useful for recognition of triplet

CC target sub-sites having the nucleotide G in the 5'-most position of the

CC sub-site. (I) is useful in studying gene function, and for human

CC therapeutics and plant engineering. (I), (II) or (III) is useful in

CC a subject, in diagnostic methods for sequence specific detection of

CC target nucleic acid in a sample, and in assays to determined the

CC phenotype and function of gene expression. (I) has improved affinity

CC and specificity for their target sequences, as well as enhanced

CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230

CC represent DNA target sequences and zinc finger peptides which are given

CC in the exemplification of the present invention.

XX

SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;

Best Local Similarity 100.0%; Pred. No. 9.3e+05;

Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTNR 7

Db 1 DRSNLTNR 7

RESULT 21

ABP49241

ID ABP49241 standard; Peptide; 7 AA.

XX

AC ABP49241;

XX

DT 28-AUG-2002 (first entry)

XX

DE Zinc finger protein related peptide motif SEQ ID NO:1553.

XX

KW Zinc finger protein; ZFP; DNA binding protein; zinc finger.

XX

OS Homo sapiens.

OS Synthetic.

OS

PN WO200242459-A2.

XX

PD 30-MAY-2002.

XX

PF 20-NOV-2001; 2001WO-US43438.

XX

PR 20-NOV-2000; 2000US-0716637.

XX

PA (SANG-) SANGAMO BIOSCIENCES INC.

XX

PI Liu Q;

XX

DR WPI; 2002-500284/53.

XX

PT New zinc finger protein that binds to target site, useful in studying

PT gene function and for human therapeutics and plant engineering,

PT comprises first, second and third zinc fingers, ordered from N- to

PT C-terminus

XX

PS Example 1; Page 48; 81pp; English.

XX

CC The present invention describes a zinc finger protein (I) that binds to

CC a target site, comprising a first (F1), a second (F2), and a third (F3)

CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the

CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),

CC and a third (S3) target subsite. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target subsite, selecting the F2 zinc finger such
CC that it binds to the S2 target subsite, and selecting the F3 zinc
CC finger such that it binds to the S3 target subsite, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target subsites having the nucleotide G in the 5'-most position of the
CC subsite. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.

XX Sequence 7 AA;
SQ Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTTR 7
|||
Db 1 DRSNLTTR 7

RESULT 22
ABP49259 ID ABP49259 standard; Peptide; 7 AA.
XX AC ABP49259;
XX DT 28-AUG-2002 (first entry)
XX DE Zinc finger protein related peptide motif SEQ ID NO:1559.
XX KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX OS Homo sapiens.
XX OS Synthetic.
XX PN WO200242459-A2.
XX PD 30-MAY-2002.
XX PF 20-NOV-2001; 2001WO-US43438.
XX PR 20-NOV-2000; 2000US-0716637.
XX PA (SANG-) SANGAMO BIOSCIENCES INC.
XX PI Liu Q;
XX DR WPI; 2002-500284/53.
XX PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX Example 1; Page 48; 81pp; English.
XX The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target subsite. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that

CC it binds to the S1 target subsite, selecting the F2 zinc finger such
CC that it binds to the S2 target subsite, and selecting the F3 zinc
CC finger such that it binds to the S3 target subsite, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target subsites having the nucleotide G in the 5'-most position of the
CC subsite. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.

XX Sequence 7 AA;
SQ Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTTR 7
|||
Db 1 DRSNLTTR 7

RESULT 23
ABP49274 ID ABP49274 standard; Peptide; 7 AA.
XX AC ABP49274;
XX DT 28-AUG-2002 (first entry)
XX DE Zinc finger protein related peptide motif SEQ ID NO:1564.
XX KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX OS Homo sapiens.
XX OS Synthetic.
XX PN WO200242459-A2.
XX PD 30-MAY-2002.
XX PF 20-NOV-2001; 2001WO-US43438.
XX PR 20-NOV-2000; 2000US-0716637.
XX PA (SANG-) SANGAMO BIOSCIENCES INC.
XX PI Liu Q;
XX DR WPI; 2002-500284/53.
XX PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX Example 1; Page 48; 81pp; English.
XX The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target subsite. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target subsite, selecting the F2 zinc finger such
CC that it binds to the S2 target subsite, and selecting the F3 zinc
CC finger such that it binds to the S3 target subsite, thus designing (I)

CC that binds to a target site. (I) is useful for recognition of triplet
CC target subsites having the nucleotide G in the 5'-most position of the
CC subsite. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
XX
SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTTR 7
Db 1 DRSNLTTR 7

RESULT 24
ABP49313
ID ABP49313 standard; Peptide; 7 AA.
XX
AC ABP49313;
XX
DT 28-AUG-2002 (first entry)
XX
DE Zinc finger protein related peptide motif SEQ ID NO:1577.
XX
KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN WO200242459-A2.
XX
PD 30-MAY-2002.
XX
PF 20-NOV-2001; 2001WO-US43438.
XX
PR 20-NOV-2000; 2000US-0716637.
XX
PA (SANG-) SANGAMO BIOSCIENCES INC.
XX
PI Liu Q;
XX
DR WPI; 2002-500284/53.
XX
XX
PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX
PS Example 1; Page 48; 81pp; English.
XX
CC The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target subsite. Also described are: (1) a polypeptide
CC (II) comprising (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target subsite, selecting the F2 zinc finger such that
CC that it binds to the S2 target subsite, and selecting the F3 zinc
CC finger such that it binds to the S3 target subsite, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target subsites having the nucleotide G in the 5'-most position of the
CC subsite. (I) is useful in studying gene function, and for human

CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
XX
SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTTR 7
Db 1 DRSNLTTR 7

RESULT 25
ABP49666
ID ABP49666 standard; Peptide; 7 AA.
XX
AC ABP49666;
XX
DT 28-AUG-2002 (first entry)
XX
DE Zinc finger protein related peptide motif SEQ ID NO:1899.
XX
KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN WO200242459-A2.
XX
PD 30-MAY-2002.
XX
PF 20-NOV-2001; 2001WO-US43438.
XX
PR 20-NOV-2000; 2000US-0716637.
XX
PA (SANG-) SANGAMO BIOSCIENCES INC.
XX
PI Liu Q;
XX
DR WPI; 2002-500284/53.
XX
XX
PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX
PS Example 1; Page 52; 81pp; English.
XX
CC The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target subsite. Also described are: (1) a polypeptide
CC (II) comprising (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target subsite, selecting the F2 zinc finger such that
CC that it binds to the S2 target subsite, and selecting the F3 zinc
CC finger such that it binds to the S3 target subsite, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target subsites having the nucleotide G in the 5'-most position of the
CC subsite. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of

CC target nucleic acid in a sample, and in assays to determined the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.

XX
SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7
|||
Db 1 DRSNLTR 7

RESULT 26

ABP49769
ID ABP49769 standard; Peptide; 7 AA.

AC ABP49769;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:3535.

KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.

OS Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

WPI; 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -

PS Example 1; Page 54; 81pp; English.

XX The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target subsite. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target subsite, selecting the F2 zinc finger such
CC that it binds to the S2 target subsite, and selecting the F3 zinc
CC finger such that it binds to the S3 target subsite, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target subsites having the nucleotide G in the 5'-most position of the
CC subsite. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determined the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced

CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.

XX
SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7
|||
Db 1 DRSNLTR 7

RESULT 27

ABP49880
ID ABP49880 standard; Peptide; 7 AA.

AC ABP49880;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:3572.

KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.

OS Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

WPI; 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -

PS Example 1; Page 55; 81pp; English.

XX The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target subsite. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target subsite, selecting the F2 zinc finger such
CC that it binds to the S2 target subsite, and selecting the F3 zinc
CC finger such that it binds to the S3 target subsite, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target subsites having the nucleotide G in the 5'-most position of the
CC subsite. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determined the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.

XX Sequence 7 AA;
SQ Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTTR 7
1 DRSNLTTR 7
Db 1 DRSNLTTR 7

RESULT 28
ABP49958
ID ABP49958 standard; Peptide; 7 AA.
XX AC ABP49958;
XX DT 28-AUG-2002 (first entry)
XX DE Zinc finger protein related peptide motif SEQ ID NO:3598.
XX KW Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX OS Homo sapiens.
XX OS Synthetic.
XX PN WO200242459-A2.
XX PD 30-MAY-2002.
XX PF 20-NOV-2001; 2001WO-US43438.
XX PR 20-NOV-2000; 2000US-0716637.
XX PA (SANG-) SANGAMO BIOSCIENCES INC.
XX PI Liu Q;
XX DR WPI; 2002-500284/53.
XX PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX PS Example 1; Page 55; 81pp; English.
XX CC The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target subsite. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target subsite, selecting the F2 zinc finger such
CC that it binds to the S2 target subsite, and selecting the F3 zinc
CC finger such that it binds to the S3 target subsite, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target subsites having the nucleotide G in the 5'-most position of the
CC subsite. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC a subject, in diagnostic methods for expression of a target region within
CC a target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
XX SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTTR 7
1 DRSNLTTR 7
Db 1 DRSNLTTR 7

RESULT 29
ABP49964
ID ABP49964 standard; Peptide; 7 AA.
XX AC ABP49964;
XX DT 28-AUG-2002 (first entry)
XX DE Zinc finger protein related peptide motif SEQ ID NO:3600.
XX KW Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX OS Homo sapiens.
XX OS Synthetic.
XX PN WO200242459-A2.
XX PD 30-MAY-2002.
XX PF 20-NOV-2001; 2001WO-US43438.
XX PR 20-NOV-2000; 2000US-0716637.
XX PA (SANG-) SANGAMO BIOSCIENCES INC.
XX PI Liu Q;
XX DR WPI; 2002-500284/53.
XX PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX PS Example 1; Page 55; 81pp; English.
XX CC The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target subsite. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target subsite, selecting the F2 zinc finger such
CC that it binds to the S2 target subsite, and selecting the F3 zinc
CC finger such that it binds to the S3 target subsite, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target subsites having the nucleotide G in the 5'-most position of the
CC subsite. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC a subject, in diagnostic methods for expression of a target region within
CC a target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
XX SQ Sequence 7 AA;

OY 1 DRSNLTR 7
| | | | |
Db 1 DRSNLTR 7

RESULT 30
ABP50056
ID ABP50056 standard; Peptide; 7 AA.
XX
AC ABP50056;
XX
DT 28-AUG-2002 (first entry)
XX
DE Zinc finger protein related peptide motif SEQ ID NO:3131.
XX
KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX
OS Homo sapiens.
OS Synthetic.
PN WO200242459-A2.
XX
PD 30-MAY-2002.
XX
PF 20-NOV-2001; 2001WO-US43438.
XX
PR 20-NOV-2000; 2000US-0716637.
XX
PA (SANG-) SANGAMO BIOSCIENCES INC.
XX
PI Liu Q;
XX
DR WPI; 2002-500284/53.
XX
PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX
PS Example 1; Page 56; 81pp; English.
XX
CC The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3',-5' direction, a first (S1), a second (S2),
CC and a third (S3) target sub-site. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such
CC that it binds to the S2 target sub-site, and selecting the F3 zinc
CC finger such that it binds to the S3 target sub-site, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target sub-sites having the nucleotide G in the 5'-most position of the
CC sub-site. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
XX
SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTR 7
| | | | |

Db 1 DRSNLTR 7

RESULT 31
ABP50162
ID ABP50162 standard; Peptide; 7 AA.
XX
AC ABP50162;
XX
DT 28-AUG-2002 (first entry)
XX
DE Zinc finger protein related peptide motif SEQ ID NO:3666.
XX
KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX
OS Homo sapiens.
OS Synthetic.
PN WO200242459-A2.
XX
PD 30-MAY-2002.
XX
PF 20-NOV-2001; 2001WO-US43438.
XX
PR 20-NOV-2000; 2000US-0716637.
XX
PA (SANG-) SANGAMO BIOSCIENCES INC.
XX
PI Liu Q;
XX
DR WPI; 2002-500284/53.
XX
PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX
PS Example 1; Page 57; 81pp; English.
XX
CC The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3',-5' direction, a first (S1), a second (S2),
CC and a third (S3) target sub-site. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such
CC that it binds to the S2 target sub-site, and selecting the F3 zinc
CC finger such that it binds to the S3 target sub-site, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target sub-sites having the nucleotide G in the 5'-most position of the
CC sub-site. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
XX
SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTR 7
| | | | |
Db 1 DRSNLTR 7

RESULT 32
ABP50166
ID ABP50166 standard; Peptide; 7 AA.
XX
AC ABP50166;
XX
DT 28-AUG-2002 (first entry)
XX
DE Zinc finger protein related peptide motif SEQ ID NO:2668.
XX
KW Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN WO200242459-A2.
XX
PD 30-MAY-2002.
XX
PF 20-NOV-2001; 2001WO-US43438.
XX
PR 20-NOV-2000; 2000US-0716637.
XX
PA (SANG-) SANGAMO BIOSCIENCES INC.
XX
PI Liu Q;
XX
DR WPI; 2002-500284/53.
XX
PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX
PS Example 1; Page 57; 81pp; English.
XX
CC The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target subsite. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target subsite, selecting the F2 zinc finger such
CC that it binds to the S2 target subsite, and selecting the F3 zinc
CC finger such that it binds to the S3 target subsite, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target subsites having the nucleotide G in the 5'-most position of the
CC subsite. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determined the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
XX
SQ Sequence 7 AA;
XX
Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 DRSNLTTR 7
| | | | | | |
| | | | | | |
Db 1 DRSNLTTR 7

RESULT 33
ABP50254
ID ABP50254 standard; Peptide; 7 AA.
XX

XX
AC ABP50254;
XX
DT 28-AUG-2002 (first entry)
XX
DE Zinc finger protein related peptide motif SEQ ID NO:3197.
XX
KW Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN WO200242459-A2.
XX
PD 30-MAY-2002.
XX
PF 20-NOV-2001; 2001WO-US43438.
XX
PR 20-NOV-2000; 2000US-0716637.
XX
PA (SANG-) SANGAMO BIOSCIENCES INC.
XX
PI Liu Q;
XX
DR WPI; 2002-500284/53.
XX
PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX
PS Example 1; Page 57; 81pp; English.
XX
CC The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target subsite. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target subsite, selecting the F2 zinc finger such
CC that it binds to the S2 target subsite, and selecting the F3 zinc
CC finger such that it binds to the S3 target subsite, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target subsites having the nucleotide G in the 5'-most position of the
CC subsite. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determined the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
XX
SQ Sequence 7 AA;
XX
Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 DRSNLTTR 7
| | | | | | |
| | | | | | |
Db 1 DRSNLTTR 7

RESULT 34
ABP50277
ID ABP50277 standard; Peptide; 7 AA.
XX
AC ABP50277;
XX

DT 28-AUG-2002 (first entry)
XX
XX Zinc finger protein related peptide motif SEQ ID NO:2705.
DE
XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.
KM
XX Homo sapiens.
OS
XX Synthetic.
PN WO200242459-A2.
XX
XX 30-MAY-2002.
PD
XX 20-NOV-2001; 2001WO-US43438.
PF
XX 20-NOV-2000; 2000US-0716637.
PR
XX (SANG-) SANGAMO BIOSCIENCES INC.
PA
XX
PI Liu Q;
XX
XX WPI; 2002-500284/53.
DR
XX
XX New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX
XX Example 1; Page 57; 81pp; English.
PS
XX
XX The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target sub-site. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such
CC that it binds to the S2 target sub-site, and selecting the F3 zinc
CC finger such that it binds to the S3 target sub-site, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target sub-sites having the nucleotide G in the 5'-most position of the
CC sub-site. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
XX
XX Sequence 7 AA;
SQ

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservativity 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTIR 7
|||
Db 1 DRSNLTIR 7

RESULT 35
ABP50311
ID ABP50311 standard; Peptide; 7 AA.
XX
XX ABP50311;
AC
XX 28-AUG-2002 (first entry)
DT
XX Zinc finger protein related peptide motif SEQ ID NO:3216.
DE

XX
XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.
KM
XX Homo sapiens.
OS
XX Synthetic.
PN WO200242459-A2.
XX
XX 30-MAY-2002.
PD
XX 20-NOV-2001; 2001WO-US43438.
PF
XX 20-NOV-2000; 2000US-0716637.
PR
XX (SANG-) SANGAMO BIOSCIENCES INC.
PA
XX
PI Liu Q;
XX
XX WPI; 2002-500284/53.
DR
XX
XX New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX
XX Example 1; Page 58; 81pp; English.
PS
XX
XX The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target sub-site. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such
CC that it binds to the S2 target sub-site, and selecting the F3 zinc
CC finger such that it binds to the S3 target sub-site, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target sub-sites having the nucleotide G in the 5'-most position of the
CC sub-site. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
XX
XX Sequence 7 AA;
SQ

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservativity 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTIR 7
|||
Db 1 DRSNLTIR 7

RESULT 36
ABP50373
ID ABP50373 standard; Peptide; 7 AA.
XX
XX ABP50373;
AC
XX 28-AUG-2002 (first entry)
DT
XX Zinc finger protein related peptide motif SEQ ID NO:2737.
DE
XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.
KM
XX

OS Homo sapiens.
OS Synthetic.
XX WO200242459-A2.
PN
XX
XX 30-MAY-2002.
PD
XX
XX 20-NOV-2001; 2001WO-US43438.
PF
XX
XX 20-NOV-2000; 2000US-0716637.
PR
XX
XX (SANG-) SANGAMO BIOSCIENCES INC.
PA
XX
XX Liu Q;
PI
XX
XX WPI; 2002-500284/53.
DR
XX
XX
PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX
XX
PS Example 1; Page 58; 81pp; English.
XX
XX The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target sub-site. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such
CC that it binds to the S2 target sub-site, and selecting the F3 zinc
CC finger such that it binds to the S3 target sub-site, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target sub-sites having the nucleotide G in the 5'-most position of the
CC sub-site. (I) is useful in studying gene function, and for human
CC therapeutic methods and plant engineering. (I), (II) or (III) is useful in
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
XX
XX
SQ Sequence 7 AA;
QY
QY 1 DRSNLTTR 7
Db 1 DRSNLTTR 7

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

RESULT 37
ID ABP50521 standard; Peptide; 7 AA.
XX
XX ABP50521;
AC
XX
XX 28-AUG-2002 (first entry)
DT
XX
XX Zinc finger protein related peptide motif SEQ ID NO:3286.
DE
XX
XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.
KM
XX
XX Homo sapiens.
OS
OS Synthetic.

PN WO200242459-A2.
XX
XX
XX 30-MAY-2002.
PD
XX
XX 20-NOV-2001; 2001WO-US43438.
PF
XX
XX 20-NOV-2000; 2000US-0716637.
PR
XX
XX (SANG-) SANGAMO BIOSCIENCES INC.
PA
XX
XX Liu Q;
PI
XX
XX WPI; 2002-500284/53.
DR
XX
XX
PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX
XX
PS Example 1; Page 59; 81pp; English.
XX
XX The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target sub-site. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such
CC that it binds to the S2 target sub-site, and selecting the F3 zinc
CC finger such that it binds to the S3 target sub-site, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target sub-sites having the nucleotide G in the 5'-most position of the
CC sub-site. (I) is useful in studying gene function, and for human
CC therapeutic methods and plant engineering. (I), (II) or (III) is useful in
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
XX
XX
SQ Sequence 7 AA;
QY
QY 1 DRSNLTTR 7
Db 1 DRSNLTTR 7

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

RESULT 38
ID ABP50524 standard; Peptide; 7 AA.
XX
XX ABP50524;
AC
XX
XX 28-AUG-2002 (first entry)
DT
XX
XX Zinc finger protein related peptide motif SEQ ID NO:3287.
DE
XX
XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.
KM
XX
XX Homo sapiens.
OS
OS Synthetic.
PN WO200242459-A2.
XX
XX 30-MAY-2002.


```

XX PF 20-NOV-2001; 2001WO-US43438.
XX PR 20-NOV-2000; 2000US-0716637.
XX PA (SANG-) SANGAMO BIOSCIENCES INC.
XX PI Liu Q;
XX DR WPI; 2002-500284/53.
XX PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
PS Example 1; Page 59; 81pp; English.
XX CC The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target subsite. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target subsite, selecting the F2 zinc finger such
CC that it binds to the S2 target subsite, and selecting the F3 zinc
CC finger such that it binds to the S3 target subsite, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target subsites having the nucleotide G in the 5'-most position of the
CC subsite. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determined the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
CC XX
SQ Sequence 7 AA;
Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
OY 1 DRSNLTR 7
| | | | | | |
| | | | | | |
Db 1 DRSNLTR 7
RESULT 39
ABP50535 ID ABP50535 standard; Peptide; 7 AA.
XX AC ABP50535;
XX DT 28-AUG-2002 (first entry)
XX DE Zinc finger protein related peptide motif SEQ ID NO:2791.
XX KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX OS Homo sapiens.
XX OS Synthetic.
XX PN WO200242459-A2.
XX PD 30-MAY-2002.
XX PF 20-NOV-2001; 2001WO-US43438.
XX
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PR 20-NOV-2000; 2000US-0716637.
PA (SANG-) SANGAMO BIOSCIENCES INC.
XX
XX
PI Liu Q;
XX
XX DR WPI; 2002-500284/53.
XX
PS
PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX
XX Example 1; Page 59; 81pp; English.
XX
XX The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target sub-site. Also described are: (I) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such
CC that it binds to the S2 target sub-site, and selecting the F3 zinc
CC finger such that it binds to the S3 target sub-site, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target sub-sites having the nucleotide G in the 5'-most position of the
CC sub-site. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of the
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
XX
XX Sequence 7 AA;
SQ

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
CY 1 DRSNLTTR 7
1 |||||
Db 1 DRSNLTTR 7

RESULT 40
ABP50538
ID ABP50538 standard; Peptide; 7 AA.
AC ABP50538;
XX
DT 28-AUG-2002 (first entry)
XX
DE Zinc finger protein related peptide motif SEQ ID NO:2792.
XX
XX Zinc finger protein; ZFP; DNA binding protein; zinc finger.
KW Homo sapiens.
OS Synthetic.
XX
XX WO200242459-A2.
PN
PD 30-MAY-2002.
XX
PF 20-NOV-2001; 2001WO-US43438.
XX
PR 20-NOV-2000; 2000US-0716637.
XX
PA (SANG-) SANGAMO BIOSCIENCES INC.

XX
PI Liu Q;
XX
DR WPI; 2002-500284/53.
XX
PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX
PS Example 1; Page 59; 81pp; English.
XX
CC The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target sub-site. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such
CC that it binds to the S2 target sub-site, and selecting the F3 zinc
CC finger such that it binds to the S3 target sub-site, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target sub-sites having the nucleotide G in the 5'-most position of the
CC sub-site. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determined the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
XX
SQ Sequence 7 AA;
XX
Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 DRSNLTR 7
1 |||||
Db 1 DRSNLTR 7
RESULT 41
ABP50542
ID ABP50542 standard; Peptide; 7 AA.
XX
AC ABP50542;
XX
DT 28-AUG-2002 (first entry)
XX
DE Zinc finger protein related peptide motif SEQ ID NO:3293.
XX
KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN WO200242459-A2.
XX
PD 30-MAY-2002.
XX
PF 20-NOV-2001; 2001WO-US43438.
XX
PR 20-NOV-2000; 2000US-0716637.
XX
PA (SANG-) SANGAMO BIOSCIENCES INC.
XX
PI Liu Q;
XX

DR WPI; 2002-500284/53.
XX
XX New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX
PS Example 1; Page 59; 81pp; English.
XX
CC The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target sub-site. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such
CC that it binds to the S2 target sub-site, and selecting the F3 zinc
CC finger such that it binds to the S3 target sub-site, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target sub-sites having the nucleotide G in the 5'-most position of the
CC sub-site. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determined the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
XX
SQ Sequence 7 AA;
XX
Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
QY 1 DRSNLTR 7
1 |||||
Db 1 DRSNLTR 7
RESULT 42
ABP50545
ID ABP50545 standard; Peptide; 7 AA.
XX
AC ABP50545;
XX
DT 28-AUG-2002 (first entry)
XX
DE Zinc finger protein related peptide motif SEQ ID NO:3294.
XX
KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX
OS Homo sapiens.
OS Synthetic.
XX
PN WO200242459-A2.
XX
PD 30-MAY-2002.
XX
PF 20-NOV-2001; 2001WO-US43438.
XX
PR 20-NOV-2000; 2000US-0716637.
XX
PA (SANG-) SANGAMO BIOSCIENCES INC.
XX
PI Liu Q;
XX
DR WPI; 2002-500284/53.
XX
PT New zinc finger protein that binds to target site, useful in studying

PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX Example 1; Page 59; 81pp; English.
XX
CC The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target sub-site. Also described are: (I) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such
CC that it binds to the S2 target sub-site, and selecting the F3 zinc
CC finger such that it binds to the S3 target sub-site, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target sub-sites having the nucleotide G in the 5'-most position of the
CC sub-site. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ7213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
CC
XX
SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTTR 7
Db 1 DRSNLTTR 7

RESULT 43
ABP50823
ID ABP50823 standard; Peptide; 7 AA.
XX AC ABP50823;
XX DT 28-AUG-2002 (first entry)
XX DE Zinc finger protein related peptide motif SEQ ID NO:2887.
XX KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX OS Homo sapiens.
XX OS Synthetic.
XX PN WO200242459-A2.
XX PD 30-MAY-2002.
XX PF 20-NOV-2001; 2001WO-US43438.
XX PR 20-NOV-2000; 2000US-0716637.
XX PA (SANG-) SANGAMO BIOSCIENCES INC.
XX PI Liu Q;
XX DR WPI; 2002-500284/53.
XX PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -

XX Example 1; Page 61; 81pp; English.
XX
CC The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target sub-site. Also described are: (I) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such
CC that it binds to the S2 target sub-site, and selecting the F3 zinc
CC finger such that it binds to the S3 target sub-site, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target sub-sites having the nucleotide G in the 5'-most position of the
CC sub-site. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ7213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.
CC
XX
SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTTR 7
Db 1 DRSNLTTR 7

RESULT 44
ABP50858
ID ABP50858 standard; Peptide; 7 AA.
XX AC ABP50858;
XX DT 28-AUG-2002 (first entry)
XX DE Zinc finger protein related peptide motif SEQ ID NO:3898.
XX KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX OS Homo sapiens.
XX OS Synthetic.
XX PN WO200242459-A2.
XX PD 30-MAY-2002.
XX PF 20-NOV-2001; 2001WO-US43438.
XX PR 20-NOV-2000; 2000US-0716637.
XX PA (SANG-) SANGAMO BIOSCIENCES INC.
XX PI Liu Q;
XX DR WPI; 2002-500284/53.
XX PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -
XX Example 1; Page 61; 81pp; English.

CC The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target sub-site. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such
CC that it binds to the S2 target sub-site, and selecting the F3 zinc
CC finger such that it binds to the S3 target sub-site, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target sub-sites having the nucleotide G in the 5'-most position of the
CC sub-site. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.

XX Sequence 7 AA;
SQ
Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTTR 7
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|||
|||
Db 1 DRSNLTTR 7

RESULT 45
ABP50861
ID ABP50861 standard; Peptide; 7 AA.
XX AC ABP50861;
XX DT 28-AUG-2002 (first entry)
XX DE Zinc finger protein related peptide motif SEQ ID NO:3899.
XX KW Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX OS Homo sapiens.
XX OS Synthetic.
XX PN WO200242459-A2.
XX PD 30-MAY-2002.
XX PF 20-NOV-2001; 2001WO-US43438.
XX PR 20-NOV-2000; 2000US-0716637.
XX PA (SANG-) SANGAMO BIOSCIENCES INC.
XX PI Liu Q;
XX DR WPI; 2002-500284/53.
XX PT New zinc finger protein that binds to target site, useful in studying
XX PT gene function and for human therapeutics and plant engineering,
XX PT comprises first, second and third zinc fingers, ordered from N- to
XX PT C-terminus -
XX PS Example 1; Page 61; 81pp; English.
XX CC The present invention describes a zinc finger protein (I) that binds to
XX CC a target site, comprising a first (F1), a second (F2), and a third (F3)
XX CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the

CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target sub-site. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target sub-site, selecting the F2 zinc finger such
CC that it binds to the S2 target sub-site, and selecting the F3 zinc
CC finger such that it binds to the S3 target sub-site, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target sub-sites having the nucleotide G in the 5'-most position of the
CC sub-site. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.

XX Sequence 7 AA;
SQ
Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTTR 7
|||
|||
|||
Db 1 DRSNLTTR 7

RESULT 46
ABP50914
ID ABP50914 standard; Peptide; 7 AA.
XX AC ABP50914;
XX DT 28-AUG-2002 (first entry)
XX DE Zinc finger protein related peptide motif SEQ ID NO:3417.
XX KW Zinc finger protein; ZFP; DNA binding protein; zinc finger.
XX OS Homo sapiens.
XX OS Synthetic.
XX PN WO200242459-A2.
XX PD 30-MAY-2002.
XX PF 20-NOV-2001; 2001WO-US43438.
XX PR 20-NOV-2000; 2000US-0716637.
XX PA (SANG-) SANGAMO BIOSCIENCES INC.
XX PI Liu Q;
XX DR WPI; 2002-500284/53.
XX PT New zinc finger protein that binds to target site, useful in studying
XX PT gene function and for human therapeutics and plant engineering,
XX PT comprises first, second and third zinc fingers, ordered from N- to
XX PT C-terminus -
XX PS Example 1; Page 62; 81pp; English.
XX CC The present invention describes a zinc finger protein (I) that binds to
XX CC a target site, comprising a first (F1), a second (F2), and a third (F3)
XX CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
XX CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
XX CC and a third (S3) target sub-site. Also described are: (1) a polypeptide
XX CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and

CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target subsite, selecting the F2 zinc finger such
CC that it binds to the S2 target subsite, and selecting the F3 zinc
CC finger such that it binds to the S3 target subsite, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target subsites having the nucleotide G in the 5'-most position of the
CC subsite. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.

XX SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTR 7
Db 1 DRSNLTR 7

RESULT 47

ABP50920 ID ABP50920 standard; Peptide; 7 AA.

AC ABP50920;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:3419.

KW Zinc finger protein; ZFP; DNA binding protein; zinc finger.

OS Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

DR WPI; 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -

XX PS Example 1; Page 62; 81pp; English.

CC The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target subsite. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target subsite, selecting the F2 zinc finger such
CC that it binds to the S2 target subsite, and selecting the F3 zinc

CC finger such that it binds to the S3 target subsite, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target subsites having the nucleotide G in the 5'-most position of the
CC subsite. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.

XX SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTR 7
Db 1 DRSNLTR 7

RESULT 48

ABP51092 ID ABP51092 standard; Peptide; 7 AA.

AC ABP51092;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:3976.

KW Zinc finger protein; ZFP; DNA binding protein; zinc finger.

OS Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

DR WPI; 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -

XX PS Example 1; Page 63; 81pp; English.

CC The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target subsite. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target subsite, selecting the F2 zinc finger such
CC that it binds to the S2 target subsite, and selecting the F3 zinc
CC finger such that it binds to the S3 target subsite, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target subsites having the nucleotide G in the 5'-most position of the

CC subsite. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ7213 to ABQ7224 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.

XX SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTR 7
|||
Db 1 DRSNLTR 7

RESULT 49

ABP51101
ID ABP51101 standard; Peptide; 7 AA.

AC ABP51101;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:3979.

KW Zinc finger protein; ZFP; DNA binding protein; zinc finger.

OS Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

DR WPI; 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -

PS Example 1; Page 63; 81pp; English.

XX The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3',-5' direction, a first (S1), a second (S2),
CC and a third (S3) target subsite. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target subsite, selecting the F2 zinc finger such
CC that it binds to the S2 target subsite, and selecting the F3 zinc
CC finger such that it binds to the S3 target subsite, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target subsites having the nucleotide G in the 5'-most position of the
CC subsite. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within

CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ7213 to ABQ7224 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.

XX SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTR 7
|||
Db 1 DRSNLTR 7

RESULT 50

ABP51147
ID ABP51147 standard; Peptide; 7 AA.

AC ABP51147;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:2995.

KW Zinc finger protein; ZFP; DNA binding protein; zinc finger.

OS Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

DR WPI; 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -

PS Example 1; Page 63; 81pp; English.

XX The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3',-5' direction, a first (S1), a second (S2),
CC and a third (S3) target subsite. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target subsite, selecting the F2 zinc finger such
CC that it binds to the S2 target subsite, and selecting the F3 zinc
CC finger such that it binds to the S3 target subsite, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target subsites having the nucleotide G in the 5'-most position of the
CC subsite. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determine the
CC phenotype and function of gene expression. (I) has improved affinity

CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.

XX
SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7
|||
1 DRSNLTR 7

Db

RESULT 51
ABP51150
ID ABP51150 standard; Peptide; 7 AA.

XX
AC ABP51150;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:2996.

KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.

OS Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

DR WPI; 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -

PS Example 1; Page 63; 81pp; English.

XX The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target subsite. Also described are: (I) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target subsite, selecting the F2 zinc finger such
CC that it binds to the S2 target subsite, and selecting the F3 zinc
CC finger such that it binds to the S3 target subsite, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target subsites having the nucleotide G in the 5'-most position of the
CC subsite. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determined the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given

CC in the exemplification of the present invention.

XX
SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTR 7
|||
1 DRSNLTR 7

Db

RESULT 52
ABP51159
ID ABP51159 standard; Peptide; 7 AA.

XX
AC ABP51159;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:2999.

KM Zinc finger protein; ZFP; DNA binding protein; zinc finger.

OS Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

DR WPI; 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -

PS Example 1; Page 63; 81pp; English.

XX The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3'-5' direction, a first (S1), a second (S2),
CC and a third (S3) target subsite. Also described are: (I) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target subsite, selecting the F2 zinc finger such
CC that it binds to the S2 target subsite, and selecting the F3 zinc
CC finger such that it binds to the S3 target subsite, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target subsites having the nucleotide G in the 5'-most position of the
CC subsite. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determined the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.

XX
SQ Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTTR 7
1 DRSNLTTR 7

RESULT 53

ABP51180
ID ABP51180 standard; Peptide; 7 AA.

AC ABP51180;

DT 28-AUG-2002 (first entry)

DE Zinc finger protein related peptide motif SEQ ID NO:3006.

KW Zinc finger protein; ZFP; DNA binding protein; zinc finger.

OS Homo sapiens.

OS Synthetic.

PN WO200242459-A2.

PD 30-MAY-2002.

PF 20-NOV-2001; 2001WO-US43438.

PR 20-NOV-2000; 2000US-0716637.

PA (SANG-) SANGAMO BIOSCIENCES INC.

PI Liu Q;

DR WPI; 2002-500284/53.

PT New zinc finger protein that binds to target site, useful in studying
PT gene function and for human therapeutics and plant engineering,
PT comprises first, second and third zinc fingers, ordered from N- to
PT C-terminus -

PS Example 1; Page 63; 81pp; English.

CC The present invention describes a zinc finger protein (I) that binds to
CC a target site, comprising a first (F1), a second (F2), and a third (F3)
CC zinc finger, ordered F1, F2, F3 from N-terminus to C-terminus, where the
CC target site comprises, in 3',-5' direction, a first (S1), a second (S2),
CC and a third (S3) target subsite. Also described are: (1) a polypeptide
CC (II) comprising (I); (2) a polynucleotide (III) encoding (I) or (II); and
CC (3) designing (M) (I) involves selecting the F1 zinc finger such that
CC it binds to the S1 target subsite, selecting the F2 zinc finger such
CC that it binds to the S2 target subsite, and selecting the F3 zinc
CC finger such that it binds to the S3 target subsite, thus designing (I)
CC that binds to a target site. (I) is useful for recognition of triplet
CC target subsites having the nucleotide G in the 5'-most position of the
CC subsite. (I) is useful in studying gene function, and for human
CC therapeutics and plant engineering. (I), (II) or (III) is useful in
CC therapeutic methods to modulate the expression of a target region within
CC a subject, in diagnostic methods for sequence specific detection of
CC target nucleic acid in a sample, and in assays to determined the
CC phenotype and function of gene expression. (I) has improved affinity
CC and specificity for their target sequences, as well as enhanced
CC biological activity. ABQ71213 to ABQ72214 and ABP48191 to ABP51230
CC represent DNA target sequences and zinc finger peptides which are given
CC in the exemplification of the present invention.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 23; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;

Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTTR 7
1 DRSNLTTR 7

RESULT 54

ABG75740
ID ABG75740 standard; peptide; 7 AA.

AC ABG75740;

DT 25-APR-2003 (first entry)

DE Zinc finger protein recognition helix S8S9.

KW Zinc finger protein; zinc finger protein-regulated gene; cancer;

KW nephritis; prostate hypertrophy; haematopoiesis; osteoporosis; obesity;

KW cardiovascular disease; diabetes; recognition helix.

OS Synthetic.

PN US2002146691-A1.

PD 10-OCT-2002.

PF 06-DEC-2000; 2000US-0731558.

PR 06-DEC-1999; 99US-0456100.

PA (CASE/) CASE C C.

PA (LIU/) LIU Q.

PA (REBA/) REBAR E J.

PA (WOLF/) WOLFFE A P.

PI Case CC, Liu Q, Rebar EJ, Wolfe AP;

DR WPI; 2003-247121/24.

PT Identification of gene(s) associated with selected phenotype comprises
PT using libraries of randomized zinc finger proteins -

PS Example 1; Page 15; 26pp; English.

CC The invention relates to identification of gene(s) associated with a
CC selected phenotype comprising providing a nucleic acid library of
CC nucleotide sequences that encode at least partially randomised zinc
CC finger proteins, transducing cells with expression vectors, culturing and
CC assaying the cells for a selected phenotype, and identifying the
CC gene(s) whose expression is modulated by expression of a zinc finger
CC protein. The method is used for the identification of gene(s) associated
CC with a selected phenotype which is related to cancer, nephritis,
CC prostate hypertrophy, haematopoiesis, osteoporosis, obesity,
CC cardiovascular disease, or diabetes. It is useful in academic
CC laboratories, pharmaceutical companies, genomics companies,
CC agricultural companies, chemical companies, and in the biotechnology
CC industry. The present sequence is a zinc finger protein nucleotide
CC triplet recognition helix incorporated into a library of the
CC invention, a combination of any 5 out of 12 helices would recognise a
CC unique 15 base pair sequence.

XX Sequence 7 AA;

Query Match 100.0%; Score 35; DB 24; Length 7;
Best Local Similarity 100.0%; Pred. No. 9.3e+05;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 DRSNLTTR 7
1 DRSNLTTR 7

Db 1 DRSNLTTR 7

Search completed: February 23, 2004, 11:42:07
Job time : 36 secs

```
RESULT 55
AAR89200
ID AAR89200 standard; peptide; 89 AA.
XX
AC AAR89200;
XX
DT 03-OCT-1996 (first entry)
XX
DE Zinc finger DNA binding domain binds to G12V mutation of ras oncogene.
XX
KW Zinc finger; DNA binding domain; Zif268; mouse; transcription factor;
KW alpha-helix; library; bacteriophage; fusion protein; minor coat protein;
KW filamentous; regulatory sequence; inhibition; expression; oncogene; ras.
XX
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Domain 9..29
FT Domain /note= "forms zinc finger 1 domain of protein"
FT Domain 37..57
FT Domain /note= "forms zinc finger 2 domain of protein"
FT Domain 65..85
FT Domain /note= "forms zinc finger 3 domain of protein"
XX
PN WO9606166-A1.
XX
PD 29-FEB-1996.
XX
PF 17-AUG-1995; 95WO-GB01949.
XX
PR 18-JUL-1995; 95GB-0014698.
PR 20-AUG-1994; 94GB-0016880.
PR 08-NOV-1994; 94GB-0022534.
XX
PA (MEDI-) MEDICAL RES COUNCIL.
XX
PI Choo Y, Garcia I, Kling A;
XX
DR WPI; 1996-151369/15.
XX
PT DNA library encoding zinc finger polypeptide(s) having randomised
PT amino acid sequence - used to inhibit oncogene expression and to
PT regulate cell division, i.e. for use in the treatment of cancer.
XX
PS Example 5; Fig 15; 87pp; English.
XX
CC This is an example of a modified zinc finger (Zf) DNA binding regions
CC which binds to the G12V mutant of ras oncogene. The modified Zf was
CC constructed by annealing synthetic oligonucleotides such that the
CC residues at pos. +3 of the alpha-helix structures of the Zf were altered.
CC The modified Zf DNA binding regions were then expressed on the surface of
CC a phage as fusions with the minor coat protein (pIII) from the
CC bacteriophage fd, in the plasmid pCANTAB5E. The invention relates to the
CC generation of Zf proteins contg. modifications at amino acid pos. -1, +1,
CC +2, +3, +5, +6 and +8 relative to the first residue of the alpha-helix in
CC the Zf. The modified Zf DNA binding proteins can be screened for binding
CC to defined nucleotide sequences or to new nucleotide sequences. The novel
CC Zf proteins can be used to regulate the expression of desired genes by
CC generating Zf proteins that bind to defined regulatory sequences of the
CC desired genes. Esp. the Zf protein can be used to inhibit the expression
CC of an oncogene e.g. a ras or BCR-ABL fusion oncogene.
XX
SQ Sequence 89 AA;

Query Match 100.0%; Score 35; DB 17; Length 89;
Best Local Similarity 100.0%; Pred. No. 2.2;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 DRSNLTR 7
   |||||
DB 74 DRSNLTR 80
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